Copyright GenCore (c) 1993 version - 2004 5.1.6 Compugen Ltd

Tit Per Sequ Run Maximum Minimum 3 Searched: erfect coring prote le: 9 2 9 daun 멂 SC 7 cessing able er ore bes bes protein 0 •• length: US-09-825-2407 1 MHINQSAC hits Gapop BLOSUM6 January Maximum Listing Minimum 107863 Geneseq_19Jun03:*

/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1980.DA:
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1981.DA:
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1983.DA:
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1983.DA:
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1983.DA:
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1983.DA:
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1983.DA:
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1985.DA:
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1985.DA:
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1988.DA:
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1988.DA:
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1989.DA:
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1999.II
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1999.II
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1991.II
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1993.II
/SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1993.II MHINQSAQQPPGVAME search, **NO** seqs, 0 Match first Match 9 00000 -414-0 fying 2004, Gap S 15 8 φ gai 100 80 chosen 8726573 9 summarie FRT Œ O 36:09 mode. parameters residues ; Search (without 1644.677 **EGGISAFSRS** time 47 Se alignments Million ce 47 ETP nts) econds **FQLRRL** 1.DAT: *
2.DAT: *
3.DAT: *
4.DAT: *
5.DAT: *
6.DAT: *
6.D \vdash updates/sec 487

> analysis 0 f distribution.

SUMMAR (IES

4	44	. L	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	œ	7	S)	ហ ុ	4	ω	2	 - - -	Result
23.	123.5	24.	212	124	124	124	N	N		7	2	•	25.	12	7.	27.	•	27.	N	129	12	•	29.		13	0		0	132	132				138	138	138	140	44		46	14	69	869.	40	Score
	•	•	5.2	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	5.4	5.4	5.4	5.4	5.4	•	5.4	•	•	•	•	5.5	5.5	5.7	•	•	•	5.7	•	5 <u>.</u>	<u></u> ص	6.1	6.1	77.7	77.	100.0	Query Match
	6281	<u>ئ</u> (4		N	79	2086	9	9	Ç	G	N	72	47	47	J	38	20	34	77	18	07	20	02	36	36	8	07	20	02	02	99	01	27	22	28	10431	12	12	4	æ	486	æ	Length
24	22	22	<u>,</u> []	23	24	23	22	22	22	22	22	16	23	22	24	22	22	22	22	22	23	22	22	24	17	22	22	24	24	21	18	15	22	22	22	22	20	24		24					DB -
ABJISITA	3740	14 L	R05	66		$\mathbf{\Phi}$	~1	4	\mathbf{c}	AAU27571	4	\mathbf{C}	N	25	19	ω 7	ω 4	-	4	~1	S	~	-	_	_	AAU36796	_	ABJ19059	95	AAY44757	~1	489	92	76	76	71	86	CT I	0	087	201	676	1257		ID
Pathogen specific	coccus a		ilamentous hae	F. necrophorum leu	spergillus fum		Staphylococcus aur	Staphylococcus aur	N. meningitidis st	Neisseria meningit	Drosophila melanog	B. sphaericus SLP.			Ph.	taphylococcus	phylococcus	0	Shrimp white spot		Bifidobacterium lo		റ	O R	Caulobacter S-laye		Staphylococcus aur	gen sp	(A		$^{\circ}$	saA S-lyaer pr	u	Corynebacterium gl	Corynebacterium ql		Bacillus subtilis	\sim	 CD	cata	bacill	tn -		Pseudomonas syring	Description

ALI GNMENTS

Pred. score

No. is t

the n

9

equal

Ö

lts the

predic

O

6

the

chance result

מַ תַּ

N 0

```
conserved Effector Loci (CEL) and Exchangeable Effecto resistance to a plant, by transforming a plant cell wi where the transgenic plant expresses a heterologous DN with an isolated protein or polypeptide in an isolated pr
     Pseudomonas
cause cell d
cancerous co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conserved
Exchanges
                                                                                    which
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       T 1
2603
AAE
                                                                    impart
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      03-
11-
17-
                                                                                                                                                                                                                                                                                                                                      New
Pse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₩O2
                                                    are
                                                                                                                                                                                                                                                                                                                                                                                       Z
                                                                                                                                                                                                                                                                                                                                                                                                       ¥Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                       Col
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (UYNE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAE12603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        eukaryo
                                                                                                                                                                                                                                                                                                                       genomic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       \vdash
                                                                                                                                                                                                                                                                                                                                        seud
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          seudomonas
                                                                                                                                                                                                                                                                                                                                                                                       PS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APR-
NOV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        001
                                                                                                                                                                                                                                                                                                                                                                                                                                        111
                                                 ch secretes art disease useful for
                                                                                                                                                                                                                                                                                                                                                                                      20
3DB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rved
                                                                                                                                                                                                                                                                                                                                        Omo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7
                                                                                                                                                                                                                                                                                                                                                                                                                                       Φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        omona
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       75066
                                                                                                                                                                                                                                                                                                                                                                                                       00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N
                                                                                                                                                                                                                                                                                                                   leic acid molect
onas Conserved E
sequences, for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORNELL RES FOUNIV NEVADA & UNIV NEBRASKA.
                                                                                                                                                                                                                                                                                                                                                                                      )1-639361/
AAD20438.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         abl
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       001
                                                                                                                                                                                                                                                                                                                                                                                                                                      ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ú
     death. Cl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ΦĦ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ~.
                                     protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fecto.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       syr
                                                                                                                                                                                                                                                                                                                                                                                                                                       Alfano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000US-1
2000US-1
2000US-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2001 WO-
                                                                    an isolated for
the protein or
resistance to t
                                                                                                                                                                                                                                                                                         65-
                                                    causing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ingae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        death;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ω,
                                                                                                                                                                                                                                                                                                                   molecules encoding p
erved Effector Loci a
for imparting dise
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ö B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Œ
                     CEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (1
                                                                                                                                                                                                                                                                                                                                                                                                                                       JR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ör
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ש
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      194160P
224604P
249548P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -US10
                                  into
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ent.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₹ 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rotein;
  by ir
                                                                                                                                                                                                                                                                                    217pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ٧ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMMUNITION INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         بنز بح
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                    eukaryotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      oci;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        canc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ry)
                                                                                                                                                                                                                                                                                                                                                                                                                                      Charkowski
                                    ø
mpart disease resistand
or polypeptide, by applying
i form or by applying a
to the treated plant.
caryotic cell death, by
eukaryotic cell under
EEL proteins are also
troducing a cytotoxic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         omato
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                        English.

isolated nucleic acid molections or polypeptides of Psolypeptides of Psolypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TEEL C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.
H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COLLE!
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ġ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       disea:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          train
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ct Ct
                                                                                                                                                                                                                                                                                                                                      pro
                                                                                                                                                                                                                                                                                                                        886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ċ
                                                                                                                                                                                                                                                                                                                    teins or
Exchange
e resist
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DC3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \Phi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (V)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       res
                                     th, by under
      also
toxic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ibac
                                                                                                                                                                                                                                                                                                                      or polypostance to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HopPtoA2
                                                               a non-path
or condition
CEL and F
      use
Pse
                     conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ce;
                                                    introduc
                                                                                                                                     or
       ful
                                                                                                                     the
                                                                                                                                                                                                                                                                                                                       O m o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      al
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ש
                                                                                                                                                                                                                                                                                                                       ካ ሐቫ
                                                                     E 9
                                                                                                                                the nucleic acplant cell, molecule under treating
        ס ב
                                     0
                                                                                                   7
                                                                                                                                                                                                                                                                                                                        ⊢ •
                                                                                                                                                                                                                                                                                                                      des o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene th
                                                                                                                                                                                      ng o
                                  Ď
                                                                                                   O D
                                                                                                                                                                                                                     Ò
                                                                   ogenic bacteri
ns effective t
EL proteins
                                                                                                                                                                                                                 _____prising
Pseudomonas
pci (EFT)
                                                                                                                    reating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tein
                                effective to
                                                                                                                                                                                                    i (EEL)
disease
       rea
                                                                                                                                                                                                                                                                                                                                   Loc
       ting
tein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     herapy;
plant;
                                                                                                                    g a plant
or
                                                                                                                                                                                                                                                    sing
                                                                                                                                                                                     acid
                                                                                      t a
```

```
RESULT 2
AAE12573
ID AAE12573
XX
AC AAE12573;
                                                                                                                                                                                                                                                                          40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88888888888
                                                                                                                                            20
                                                                                                                                                                                                           50
                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                      50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    γQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2
                                                                                                                                                                               몽
                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                            뫄
                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       뭉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cancer celi-
cancer celi-
further involves
comprising a DNA molec
to the patient, where the
molecule into cancer c
red in the cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                equence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match
                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                             42
                                                                                                                                                                                                             421
                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cells of a patient under condicels, and thus treating the carry involves administering a targeting a DNA molecule encoding the where the targetted DNA cells and the condicels and the condicels
                                                                                                                                              81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
7; Conserva
                                                                                                            PFQLRRL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (0
                                                                                                                                                                            TSYVADQTVKLAKTVKDMSGEAISSTG
                                                                                                                                                                                                                                                                                                                                                                                                                                     ct
                                  anda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ΑΑ,
                                  ď
                                                                                                                                             487
                                  Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cancer
e pv. sy
                                  ro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 T .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.
100.
                                  tein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             e e.
e targe.
cells and cer cells. The
vringae Hopf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80
80
                                  .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 54. 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                  Δ
                                  86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score :
Pred. N
                                  ጅ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    inditions effective to cause death of e cancerous condition. The method argetted DNA delivery system the cytotoxic Pseudomonas protein, d DNA delivery system delivers the the cytotoxic Pseudomonas protein. The present sequence is
                                                                                                                                                                                                                                                                                                                                                                          m - m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                No. 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2407;
                                                                                                                                                                          LKPLTPLISGALSGAMDQVGTKMMDRARGDLHY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RLYSEGETPATIAETFAKAEKFDRLATTASSAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 pPsyA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7; DB 22;
6.3e-192;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ent sequence is homolog protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 487;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                           420
                                                                                                                                                                                                                                                                                                                                          360
                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
```

```
The invention relates to an isolated nucleic acid molecule computation relates to an isolated nucleic acid molecule computations of Pseudo Conserved Effector Loci (CEL) and Exchangeable Effector Loci (Egenomic sequences. CEL and EEL DNA are useful for imparting discressistance to a plant, by transforming a plant cell with the number of the transgenic plant expresses a heterologous DNA molecul conditions effective to impart disease resistance, or by treation with an isolated protein or polypeptide, by applying the protein polypeptide in an isolated form or by applying a non-pathogenic which secretes the protein or polypeptide, under conditions efformed useful for causing eukaryotic cell death, by introducing a pseudomonas protein into a eukaryotic cell under conditions efformed cause cell death. CEL and EEL proteins are also useful for treating cancer cells, and thus treating the cancerous condition. The mediancer involves administering a targetted DNA delivery system comprising a DNA molecule encoding the cytotoxic Pseudomonas proteins are also useful cause of comprising a DNA molecule encoding the cytotoxic Pseudomonas proteins and thus treating the cancerous condition. The mediance in the cause of comprising a DNA molecule encoding the cytotoxic Pseudomonas proteins are also useful cause of comprising a DNA molecule encoding the cytotoxic Pseudomonas proteins are also useful cause of comprising a DNA molecule encoding the cytotoxic Pseudomonas proteins are also useful cause of comprising a DNA molecule encoding the cytotoxic Pseudomonas proteins are also useful cause of the patient, where the targetted DNA delivery system delivery s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Exchangeableukaryotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200175066
                                                                                                                                                                                                                                                                                  MeN
                                                                                                                                                                                                                                                                                                                                                                                                                                               03-
                                                                                                                                                                                                                                                            gen
                                                                                                                                                                                                                                                                                                                                                          (OXRR
(UYNE)
                                                                                                                                                                                                                                                                                                                                                                                                     --0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pseudomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pseudomonas
                                                                                                                                                                                                                                                                                                                                      Collmer
                                                                                                                                                                                                                                                                                                                                                                                                     7-1-
                                                                                                                                                                                                                                        la
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      onserved
                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                   AUG-
NOV-
                                                                                                                                                                                                                                                              Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                               APR.
                                                                                                                                                                                                                                         E T
                                                                                                                                                                                                                                                                         ጀ
                                                                                                                                                                                                                                                                                  nucleic
                                                                                                                                                                                                                                                                                                       DB 2
                                                                                                                                                                                                                                                                       omo
                                                                                                                                                                                                                                                              į.
                                                                                                                                                                                                                                                                                                                                                           1 1
                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                       1000
                                                                                                                                                                                                                                                                                                                                                                                                                                               N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N
                                                                                                                                                                                                                                                                                                                                                                                                     NNN
                                                                                                                                                                                                                                                                                                                                                        ORNE!
                                                                                                                                                                                                                                                                                                                                                                                                                                               001
                                                                                                                                                                                                                                                                        nas
                                                                                                                                                                                                                                                                                                                                                                                                    000
                                                                                                                                                                                                                                                            sequences
                                                                                                                                                                                                                                                                                                       1-63
AAD2
                                                                                                                                                                                                                                                                                                                                     >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               00
                                                                                                                                                                                                                                      Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E E
                                                                                                                                                                                                                                                                                                                                                                                                     000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N
                                                                                                                                                                                                                                                                                                                                                                                                     34 34 34
                                                                                                                                                                                                                                                                                                                                                                                                                                              54
                                                                                                                                                                                                                                                                                                       1936
2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fec
Ef
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         syr
                                                                                                                                                                                                                                                          acid molecules encoding
Conserved Effector Loci
ences, for imparting di
                                                                                                                                                                                                                                                                                                                                      Alfano
                                                                                                                                                                                                                                                                                                                                                          ELL RES
NEVADA
NEBRASI
                                                                                                                                                                                                                                                                                                                                                                                                   2000US
2000US
2000US
                                                                                                                                                                                                                                                                                                                                                                                                                                              2001WO-US1069
                                                                                                                                                                                                                                        21-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ingae
                                                                                                                                                                                                                                                                                                       8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           H CT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ğ
                                                                                                                                                                                                                                         N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                đ
                                                                                                                                                                                                                                       ω
•
                                                                                                                                                                                                                                                                                                                                      JR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Loc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 th;
                                                                                                                                                                                                                                                                                                                                                           ሯ
                                                                                                                                                                                                                                                                                                                                                                                                      1 1 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entry
                                                                                                                                                                                                                                                                                                                                                                                                   194
224
249
                                                                                                                                                                                                                                                                                                                                                                                FO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         p۷.
                                                                                                                                                                                                                                       217pp;
                                                                                                                                                                                                                                                                                                                                                                     COMMUNITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         i; c
                                                                                                                                                                                                                                                                                                                                                                                                     <u> 5</u> 6 →
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  O
                                                                                                                                                                                                                                                                                                                                                                                                   60P
504P
548P
                                                                                                                                                                                                                                                                                                                                      Charkowski AO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ncer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F- 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           toma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EL; cy
                                                                                                                                                                                                                                                                                                                                                                                                                                               \boldsymbol{\omega}
                                                                                                                                                                                                                                        Engl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                        ish.
                                                                                                                                                                                                                                                                                                                                                                       COLLEGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           costatí
diseas
                                                                                                                                                                                                                                                              diseas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ď
                                                                                                                                                                                                                                                            proteins
and Excha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DC3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ф (C)
                                                                                                                                                                                                                                                                                                                                                                       (t)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            res
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            itibacte:
                                                                                                                                                                                                                                                             15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CE
                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                            or polypepti
ngeable Effe
stance to pl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            al
                                                                                                                                                                                                                                                            fe
pl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ø
                                                                                                                     treating
protein c
hogenic ba
                                                                                                                                                    plant ce
nolecule
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
1sgeni
                                                                                                                                                                                                                                                              ector
                                                                                                                                                                                                                                                                                  des
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           oded
                                     The
                                                                                      pa
                                                                                                                                                                                                         seudomonas
                                            treating
s protein
use death
                                                                                                                                                                                                                   comprising
                                                                             g a cytotox
effective
                                                                                                effective proteins
                                                                                                                                                                                    diseas
                                    method
                                                                                                                                                                          nucleic
                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ס
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0 4
                                                                                                                                                                                                                                                                         Loc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             herapy,
                                                                                                                                                                cell,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          plan
                                                                                                                                 9
                                                                                                                                                       under
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tei
                                                                                                                                                                                      8
                                                                                                                                          ρ
                                                                                         toxic
                                                                                                                                          plant
                                               into of
```

system

Ø

O.

10

ςO

to į a

ď

vers

```
RES
AC
XX
DE
XX
                                                                                                                                                                                                                         200 X Q
                                                                                                                                                                               67
                                                                                                                                              δõ
                                                                                                                                                               20
                                                                                                                                                                                        밁
                                                                                                                                                                                                ΛÕ
                                                          Qγ
                                                                                                            40
                                                                                                                             γo
                                                                                                                                      밁
                                                                                                                                                       몽
                                                                                                                                                                        맑
                                                                           Š
                                                                                    밁
                                                                                            δÃ
                                                                                                     뮹
                                                                                                                     밁
                                                                                                                                                                                                            Query
Best I
                                                                                                                                                                                                         Matches
                                  SULT 3
                                                                                                                                                                                                                                 DNA molecule
is expressed
Pseudomonas s
                              AAB67
                                                                                                                                                                                                                         Sequence
                      AA
B
                                                                                                                                                                                                             Loca
                      67
                                                                                                                                                                                                                 tch
                                                                                                     301
                              677
                                                                                                                                                               121
                      677
                                                                                    361
                                                                                                             301
                                                                                                                     241
                                                                                                                              241
                                                                                                                                      181
                                                                                                                                               181
                                                   480
                                                           481
                                                                   421
                                                                                            361
                                                                                                                                                                                                         11 S
                                                                                                                                                       21
                                                                                                                                                                        61
                                                                                                                                                                                19
     cid
             2001
                                                                                                                                                                                                         Similarity
1; Conservat
                                                  PFRPMR
                                                                                                                                                                                        MHINQSAQQPPGVAMESFRTASDASLASSSVRSVSTTSCRDLQAITDYLKHHVFAAHRFS
                                                                                   VDFGVSTAGGLVANAGFGDRMLSVQSR
                                                                                                                                                                       S
C
                                                                   PFQLRR
                                                                                                                                                                                                                          486
                              andard;
                                                                                                                                                                                                                                 syringae pv.
                                                                                                                                                                                                                                     into ca
                                                                                                                                                                                                                                      ä.
             f
                                                                                                                                                                                                                          Α,
             H
                                                  485
                                                           486
     n
             Ĺ
             T,
                              'n
                                                                                                                                                                                                                                      cancer
             ent
                              rotein;
                                                                                                                                                                                                             77.78
78.48
                                                                                                                                                                                                         ive
                                                                                                                                                                                                                                          er
     α
             3
                                                                                                                                                                                                                                          cells
     HopP to
                                                                                                                                                                                                                                  tomato
                                                                                                                                                                                                             ** **
                                                                                                                                                                                                                                     cells
                                                                                                                                                                                                         \mathfrak{J}_{\mathfrak{J}}
                              4
                                                                                                                                                                                                            Score
Pred.
                              86
    Š
                                                                                                                                                                                                         Ki Si
                                                                                                                                                                                                                                 Pto
    ס
                                                                                                                                                                                                                                      Ţ
                                                                                                                                                                                                             Z H
                                                                                                                                                                                                                                         Ţ
     0
                                                                                                                                                                                                         o. 3.80
                                                                                                                                                                                                                 698
                                                                   ei.
                                                                                                                                                                                                                                 present sequence
DC3000 CEL ORF5 p
                                                                                                                                                                                                        9.5; DB 22;
3.8e-147;
ches 71; ]
                                                                                                                                                                                                                                         cytotoxic
    of
                                                                                                                                                                                                                                          Pseudomonas
                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                      18
                                                                                                                                                                                                         1;
                                                                                                                                                                                                         Gaps
                                                                                                                                               240
                                                                                                                                                               180
                                                                                                                      300
                                                                                                                                      240
                                                                                                                                                       180
                                                                                                                                                                                 120
                                                                   479
                                                                                                             360
                                                                                                                              300
                                                                            480
                                                                                    420
                                                                                                     360
                                                                                                                                                                                         9
                                                                                                                                                                                                 60
                                                                                            420
```

```
S
                                      멍
                                                      Ş
                                                                                                                                       The present sequence represents a HopPtoA protein of Pseudomonas syringae c pv. tomato DC300 CEL. This is an effector protein, which is used in the method of the invention. The specification describes a method for delivering effector proteins into a target cell. The method comprises introducing an effector protein fused to a protein transduction domain of a human immunodeficiency virus (HIV) tat protein into the target cell. The method is used for delivering a heterologous effector protein couch as an effector protein produced by bacterial plant pathogen, animal pathogen or a rhizosphere bacteria, or a protein secreted and/or delivered into eukaryotic cells by a Type III secretion system or a hypersensitive response elicitor, an avirulence protein, a confidence protein or a pathogenicity protein, into an eukaryotic cell. The method is useful for delivering effector proteins for use in pharmaceutical, insecticidal, fungicide, herbicide and other
                                                                         Query Mat
Best Loca
Matches
                                                                                                                                pharmaceutical, application
                                                                                                                                                                                                                                                                                                               therapy, invo
                                                                                                                                                                                                                                                                                                                                                              WPI
IAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO2
                                                                                                                                                                                                                                                                                                                                                                                           O
                                                                                                                                                                                                                                                                                                                                                                                                                                \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pseudomonas
                                                                                                               S
                                                                                                                                                                                                                                                                                             Example
                                                                                                                                                                                                                                                                                                                                          Delivering
                                                                                                                                                                                                                                                                                                                                                                                                             ORR
R
                                                                                                                                                                                                                                                                                                                                                                                                                                                  မှ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2-MAR-
                                                                                                              equence
                                                                                                                                                                                                                                                                                                                                                                                           lme
                                                                                                                                                                                                                                                                                                                                                              ; 2001-257850/26
SDB; AAF55683.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       00119393-
                                                                                                                                                                                                                                                                                                                                                                                                                                                  E
E
                                                                                           tch
                                                                                                                                                                                                                                                                                                                                                                                                             •
                                                                          381;
                   61
61
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2001
                                      \vdash
                                                                                                                                                                                                                                                                                             2;
                                                                                                                                                                                                                                                                                                                                                                                         >
                                                                                                                                                                                                                                                                                                                                                                                                             O RNELL
                                                                                   imilar:
                                    involves
VIGSPDERDAALAHNEQIDALVETRANRLYSEGETPATIAETFAKAE
                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                            Page
                                                                                                                                                                                                                                                                                                                                 effector proteins prolves introducing
                                                                                                               486
                                                                          llarity
Conservat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         syr
                                                                                                                                                                                                                                                                                                                                                                                           Ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Αl
                                                                                                                                                                                                                                                                                                                  domain
                                                                                                                                                                                                                                                                                                                                                                                           eer
                                                                                                                                                                                                                                                                                                                                                                                                                                                 N
                                                                                                                                                                                                                                                                                                                                                                                                                                                  000WO-US24977
                                                                                                               AA;
                                                                                                                                                                                                                                                                                                                                                                                                             RES
                                                                                                                                                                                                                                                                                             23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .ngae
                                                                                                                                                                                                                                                                                            43pp;
                                                                                                                                                                                                                                                                                                                          of.
                                                                           tive
                                                                                                                                                                                                                                                                                                                                                                                                                                015350
                                                                                                                                                                                                                                                                                                                                                                                                             FOUND
                                                                                  77.
                                                                                                                                                                                                                                                                                                                          human
                                                                                   7
                                                                                    do do
                                                                                                                                                                                                                                                                                             English
                                                                                    Se Se
                                                                           ယ္သ
                                                                                                                                                                                                                                                                                                                                           into
                                                                                  Score.
Pred.
                                                                                                                                                                                                                                                                                                                         into target cell : effector protein immunodeficiency '
                                                                          50
                                                                           Mismatches
                                                                                  18
No
                                                                                            69
                                                                                  ω.
                                                                                           Ç
                                                                                    ω 😘
                                                                                    Φ
                                                                                   DB
14
                                                                        .47;
71;
                                                                                                                                                                                                                                                                                                                                            for
                                                                                                                                                                                                                                                                                                                          virus
                                                                                                                                                                                                                                                or Pseudomonas
tein, which is use
describes a ~~
                                                                                                                                                                                                                                                                                                                                  fused
                                                                                             N
                                                                                            .
                                                                                                                                                                                                                                                                                                                                           use
                                                                           ndels
                                                                                                                                                                                                                                                                                                                          TAT
                                                                                            Leng
                                                                                                                                                                                                                                                                                                                                            בָּי
                                                                                                                                                                                                                                                                                                                       n protein
protein
protein,
 KLDRLATTTSGAL
                                                                                             th
                                               YLKHHVFAAHRF
                   DRLATTASSAF
                                                                                              \boldsymbol{\omega}
                                                                           **
                                                                                             \boldsymbol{\omega}
                                                                           Gaps
                                                                                                                                                                                                                                                        syringae
d in
d for
                                                                                                                                                                                                                                                                                                                          int
                                                                                                                                                                                                            animal
                                                        S
                   120
                                      60
                                                        \boldsymbol{\omega}
 20
                                                        Ö
```

4

Ø

(1

ש

 $\mathbf{\Phi}$

 \Box

ion

₽-

HopPtoA

protein

```
δÃ
                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                        Ųγ
                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                뮍
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                몽
                                                                                                                                                                                                                                                                                          뫄
                                                                                                                                                                                                                                                                                                                     B
                                                                            Enzyme; flavour; aroma; texture, .....fermentation process; anti-infection; infantile diarrhoea; lactose digestion anti-mutagenesis; immune system modul antihypertensive effect; urogenical infamel syndrome; endocarditis; transge
                                                                                                                                                                         T 4
)110
AAE201
                                                 %02
                      -80
                                                                                                                                                           AAE20110
                                                              Lactobacillus
                                                                                                                                 Lactobacillus
                                   14-FEB-
                                                                          ompA.
                                                                                                                                               8-JUN-2002
                                                 0021
                      AUG-
                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                        4
                                                                                                                                                                                                                                                                                                                                                                           21
                                                                                                                                                                          10
                                                                                                                                                                                                           08
                                                                                                                                                                                                                        8
                     .2001;
                                   2002
                                                N
                                                 506-
                                                                                                                                                                                                                                                              MATKNITDSATKAAVSQLSNLVGSVGVFAGWTTAGLATDPAVKKAESFIQDKVKSTASST
                                                                                                                                                                                                                                    PFRPMR
                                                                                                                                                                                                                  - ७
                                                                                                                                                                                                                       FQLRR
                     2001WO-NZ00160
                                                                                                                                  rhamnosus
                                                              rhamnosus
                                                                                                                                               ш
                                                                                                                                                                          rd
                                                                                                                                                                                                           485
                                                                                                                                                                                                                        486
                                                                                                                                               Ü
                                                                                                                                                                          54
                                                                                                                                              TT.
                                                                                                                                                                          שי
                                                                                                                                               ent
                                                                                                                                                                          ro
                                                                                                      a; texture; nutr
anti-infection;
lactose digestic
                                                                                                                                                                          ein
                                                                                                                                  outer
                                                              HN001
                                                                                                                                                                          54
                                                                                ure; nutritional; dairy manufacture; therapy; nfection; rotavirus infection; heart disease; digestion; anti-cancer; autoimmune disorder; tem modulation; allergy; Helicobacter pylori; genical infection; hepatic encephalopathy; transgenic microbe; outer membrane protein;
                                                                                                                                                                          4
                                                                                                                                  memb
                                                                                                                                                                          63
                                                                                                                                                                          ጅ
                                                                                                                                  ra
                                                                                                                                  100
                                                                                                                                 protein
                                                                                                                                 rompA
                                                                                                                                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                     479
                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                420
                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                           360
                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                      300
```

08-28-

NOV-2

000;

N N

2000US-

06342: 07246;

```
Š
                                                밁
                                                               Ş
                 몽
                                                                                                                                                             derived products such as cheeses, yogurt, fermented milk products and buttermilk; in modifying the flavour, aroma, texture related benefits of milk-derived products and in increasing of microbes during industrial fermentation processes. The baccused to increase resistance to enteric pathogens and anti-infectivity, including treatment of rotavirus infection and infalliver cancer reduction; reduction of small bowel bacterial ovimmune system modulation and treatment of autoimmune disorder allergies; treatment of allergic responses to foods; reduction lipids and prevention of heart disease; antihypertensive efferor hepatic encephalopathy; treatment of inflammatory bowel dirritable bowel syndrome; modulation of endocarditis; and for
                                                                                       BO
                                                                                      luery
est I
                                                                                tches
                                                                                                                                                                                                                                                                              polypepti
and healt
microbes
for impro
                                                                                                                                                                                                                                                                                                                                        Claim
                                                                                                                                                                                                                                                                                                                                                        mic
                                                                                                                                                                                                                                                                                                                                                                                                                                                (GENE-
                                                                                                                                       microbial population carcinogenic agent.
                                                                                                                                                                                                                                                                                                                                                               benefits
                                                                                                                                                                                                                                                                                                               Ø
                                                                                                                                                                                                                                                                                                                                                                       useful
                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2002-241760/
N-PSDB; AAD31881.
                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                        Glenn M, Ha
Christensson
                                                                                                                equence
                                                                                                                                                                                                                                                                                                               sequence
                                                                                                MA
                                                                                                                                                                                                                                                                                                                                                        robes
                                                                                                                                                                                                                                                                                improving
                                                                                                tch
116
                                                714
                                                                                                                                                                                                                                                                                                                                        2
                                                                               104;
                                                                                                                                 membrane
                 69
                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                 in
                                                                                                                                                                                                                                                                                                                                                                               ynucleot
                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                               GENESIS
VIALACT:
                                                                                                                                                                                                                                                                                             th 1
                                                                                                                                                        e bowel syndr
                                                                                                                                                                                                                                                                                                                        ent
                                                                                                                                                                                                                                                                                       ä
 ASSA
          QIALAASKSAAASSS
                                                                                                                                                                                                                                                                                                                                                              of milk-derived products
                                                               MHINQSAQQPPGVAMESFRTASDAS LASSSVRSVSTTSCRDLQAITDY
                                VIGSPDERDAALAHNEQIDALVETRANRLYSEGETPAT
                                               Havukkala IJ
on AC, Holl
                                                                                                                                                                                                                                                                                               present i
e capable
benefits
                                                                                                                                                                                                                                                                                                                                        ģ.
                                                                                                                1463
                                                                                                                                                                                                                                                                               dairy
                                                                                                                                                                                                                                                                                                                        invention
                                                                                                                                                                                                                                                                                                                                       64;
                                                                                                                               protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Н
                                                                                                                ξ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                \triangleright \pi
                                                                                                                                                                                                                                                                               ole of modifying
ts of milk-derive
manufacturing properties of a
                                                                                                                                                                                                                                                                                                                                        257pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                 E S
                                                                                EVa
                                                                                                                                                                                                                                                                                                                                                                                                        N
                                                                                                                                                                                                                                                                                                                in
                                                                                ct
                                                                                                                                                                                                                                                                                                                                                                                                                                                  0 8
                                                                                                                                       can be administered the present sequence
                                                                                                                                                                                                                                                                                                                                                                                                                        land
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ŵ
                                                                                ₽ N
                                                                                                                                                                                                                                                                                                      Lactobacillus r
f modifying the
                                                                                                                                                                                                                                                                                                                                                                                                                                                DEV CORP
                                                                                      6. 1
0. 8
                                                                                ٧
                                                                                                                                                                                                                                                                                                                        relates
ENT PFAAASVLQYMQPAINKGDWLATPLKPLTPLI
                                                                                                                               rompA
                                                                                                                                                                                                                                                                                                                                                                      polypeptides
g the flavor,
                                                                                                                                                                                                                                                                                                                                        English
                AAASAAIV
                                                                                                                                                        utili
                                                                                        do do
                                                                                                                                                                                                                                                                                                                                                                                                                               Bloksberg
                                                                                                                                                      heart disease; antihypertensive of urogenical infections, Helicol; treatment of inflammatory bowe modulation of endocarditis; and utilization and conversion. The
                                                                                                                                                                                                                                                                                                                                                                                                                        χ,
                                                                                        30.30
                                                                                                                                                                                                                                                                                              ifying to
k-derive
                                                                                Q
                                                                                4
                                                                                      Pr
Sc
                                                                                50
                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                               ng the flavour, a rived products, a processes. The f microbes used 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                 LID
                                                                                       ed.
                                                                               Mismatche:
                                                                                                                                                                                                                                                                                                                                                                                                                        toole
                                                                                                                                                                                                                                                                                                                                                                      es
F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                  D.
                                                                                      147;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                               'n,
                                                                                                                                                                                                                                                                                                                                                                or
Or
                                                                                                                                                                                                                                                                                                              rhamnosus
                                                                                                                                                                                                                                                                                                                                                                        B IT
                                                                                                                                                                                                                                                                                                                                                                                                                       PW,
                                                                                                                                                                                                                                                                                                                                                                 in
                                                                                                                                                                                                                                                                                                                                                              rom Lactobacillus roma, texture and in increasing prop
                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                       Lubbers
W, Reid
                                                                                                                                                                                                                                                                                used in
                                                                                       005
005
                                                                                                                                        to
                                                                                to
                                                                                                                                        a mammal
Lactobaci
                                                                                N & N
                AAAAVSNADASANSAAAAYDSYAS
                                                                               4
                                                                                                                                                                                                                                                                                                                        6.
                                                                                              w
                                                                                                                                                                                                                                                                                              aroma, and/or
                                                                                                                                                                                                                                                                                                              strain
                                                                                                                                                                                                                                                                                     aroma, texture, n
and/or survivabil
polynucleotides
                                                                               3.
                                                                                                                                                                                                                                                                                                                                                                                                                        JR,
                                                                                                                                                                                                                                                                                the
                                                                                              Length
                                                                               H
                                                                                ndels
                                                                                                                                                                                                                                                                                                                                                               prope
                                                                                                                                        as a:
illus
                                                                                                                                                                                                                                                                                               text
                                                                                                                                                                                                                                                                                                                HN00
                                                                                                                                                                                                                                                                                                                                                                                                                        Dekk
Cool
                                 AETE
                                                                                                                                                                                                                                                                                                                                                                       ゴェ
                                                                                                                                                                                              infantile
anti-mutagenesis;
al overgrowth;
orders and
uction of blood
                                          :|
-IKSLASDAEKQS
                                                                                                                                                                                                                                                               product
                                                                                                                                                                                                                                                                                                                                                               chamnosus
health-re-
erties of
                                                                                                                                                                                                                                                                                                                                                                                                                        bear
                                                                                                                                                                                                                                                                              ifacture
                                                                                                                                                                                                                                                        pnt
SGALSGAMDQVG
                                                                                                                                                                                                                                                                                                                                                                                                                                95
                                AKAEKFDRLATT
                                                               LKHHVF AAHRF
                                                                                                42
                                                                                                                                                                                                                                        bacteria r
                                                                                                                                                                                      tion o
                                                                                                                                                                                acter
                                                                                               63;
                                                                                                                                         rhamnosus
                                                                                                                                                 for improved ransgenic anti-
                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                         disorder
                                                                                92
                                                                                                                                                                                                                                                        the
                                                                               ×.
                                                                                                                                                                                                                                                                                               nutri
Liity
                                                                                                                                                                                                                                                                                                                                                                                                                        ;
                                                                                                                                                                                                                                                               and health
                                                                                                                                                                                                                                                                                                                                                               -related
                                                                                                                                                                                                                                                                                       are
                                                                                                                                                                                                                                                                                                              encoding
                                                                                                                                                                              pylori
                                                                               Gaps
                                                                                                                                                                                                                                                                               of
                                                                                                                                                                                                                                                        survival
                                                                                                                                                                                                                                                may
                                                                                                                                                                                                                                                                                         useful
                                                                                                                                                                                                                                                                                                O
                                                                                                                                                                                                                                                                                                       4
                                                                                                                                                                                                                                                                                                     ing a
                                                                                                                                                                                                                                                                                milk-
                 [T]
167
                                115
                                                768
                                                                60
                 26
                                                                                12;
```

```
γç
                                                                                                                                                                                                                                                                                                                                                                    δõ
PX PX T T T
                                                                                                                                                                                                                            λδ
                                                                                                                                                                                                                                            몽
                                                                                                                                                                                                                                                       QY
                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                             ΛÖ
                                                                                                                                                                                                                                                                                                                           뭉
                                                                                                                                                                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                              T 5
3784
ABU087
                                                                                Key
Pep
                                                                                                                                                                 ABU08784
28-NOV-2002
                                                                                                                  vaccine
                                                                                                                                       Moraxella
                                                    egi
                                                                              epti
                                                                                                                                                    8-MAY-
                                                                  rotein
                                 ic-di
                                                                                                    axel
                                                                                                                         er
             00
                                                     9
                                                                                                                                                                                                                                                                      030
                                                                                                                                                                                                                                           070
                                                                                                                                                                                                                                                                                   335
                                                                                                                                                                                                                                                        395
                                                                                                                                                                                                                             453
                                                                                                                                                                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                         226
                                                                                                                                                                                                                                                                                                                                                       998
                                                                                                                                                                                                                                                                                                                                                                    168
                                                                                                                                                                                                                                                                                                                                                                                 827
                                                                                                                                                                                                                                                                                                              275
                                                                                                                                                                                                                                                                                                                            914
                                                                                                                        membrane
                                                                                                                                                                                                                30
                                                                                                                                                                               œ
                                                                                                                                                    2003
                                  H
                                                                                                                                                                               4
             7200
                                 fe
                                                                                                                                                                                                                AAAQGTRGGASSSASEAGQAS
                                                                                                                                                                                                                                         | :| | |
DYASGASSSASEAGQASTAT
                                                                                                                                                                                                                                                                                                                                                      VAVSDAAAAG
                                                                                                                                                                                                                                                                                                                                                                                 |||:|
| ASAASAANDSSGYATASFAAS
                                                                                                                                                                               O
                                                                                                                                                                                                                                                  GLATDPAVKKAESFIQDKVKSTAS
                                                                                                                                                                                                                                                                      AASADVVASSAASTANSNASAAA
                                                                                                                                                                                                                                                                                                                                         VLAPALASRPSVQG
                                                                                                                                                                                                                                                                                                                                                                    TKMMDRARGDLHYLSTSPDKLHDAMAVSVKRHSPALGRQVVDMGIAVQTFSALNVVR--T
                                                                                                                                                                                                                            TVNNLRHRSAPEADIEEGGI
                                                                                                                                                                                                                                                                                  LVSATSLTKNGLALAGGYAGVSKLQKMATKNITDSATKAAVSQLSNLVGSVGVFAGWTTA
                                                                                                                                                                                                                                                                                                              FVLGMKDKEPKAALSEET DWLDAYKAI KSASYSGAALNAGKRMAGLP LDVAT DGLKAVRS
                                                                                                                                      catarrhalis
                                                                                                                                                                                                                                                                                                 AAS
                                 н
                                                                                                                                                                               T
                                 9
                                                                                                    œ
                                                                                                    rt
             <u>A</u>1
                                 Ō
                                                                                                    ar
                                                                                                                                                                                                                                                                                                 AASSYPKDS
                                                                                                                                                    \overline{\phantom{a}}
                                 Φ
                                                                                                                        protein
                                                                                                                                                                               2
                                                                                                    rhalis
                                                 1..68
/label= 9
69..2122
/label= 1
69..111
                           /note= "Specific
779..880
/note= "Encoded
                                              /label=
                                                                                                                                                    ct.
                                                                               cation/Qualif
.68
                                                                                                                                                                               Þ
                                                                                                                                                    93
                                                                                                                                                                               Ö
                                                                                                                                      outer
                                      "Specifically
                                                                                                                                                                                                                                                                                                GIQSLASQAASEAAKASSNASAATSA-
                                                                                                                                                                               ein;
                                                                                                                          --
                                                                        Signa
                                                            Mature
                                                                                                                          00
                                                                                                                                      memb
                                                                                                                         OMP106
                                                                                                                                                                               7
                                                                                                                                                                                                                                                                                                                          SAYASAASSSASEAGSYAHQAGSSASDAVGQSGSAAQHAS
                                                                                                                                                                                                                                                                                                                                                                                 -MAAAASS
                                                                                       £į
                                                                                                                                                                               N
                                                           _OMP10
                                                                                                                                                                                                                115
                                                                                                                                                                                                                                                                                                                                                     seque
                                                                                                                                                                                                                             4
                                                                                                                                                                               N
                                                                                      ers
                                                                                                                                      ane
                                                                                                                                                                               ⋛
                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                         AVI
                           ATCTAAGGC"
                                       4
                                                                                                                                                                                                                                                   — თ
                                                                                                                         Moraxella
                                       equence of mature OMP106 claimed in claim 9"
                                                                         nce
                                                                                                                                                                                                                                                  TTSYVADQTVKLAKTVKDMSGEAISSTGASLRS
                                                                                                                                                                                                                                                                                                                                         DFGVSTAGGLVANAGFGDRMLSVQSRDQLRGGA
                                                                                                                                      protein,
                                                                                                                                                                                                                                                                     -SATKAGDSKAA--
                                                                                                                         catarrhalis
                                                                                                                                      OMP 106
                                                                                                                                                                                                                                                                                               ---AAVGFSAASDASEQAKT
                                                                                                                                                                                                                                                                                                                                                                                 SAALSTAQVAAK
                                                                                                                         infection;
                                                                                                                                                                                                                                                                     | | | : : : |
--AGFSSA
                                                                                                                                                                                                                                                                                                                                                                                 865
                                                                                                                                                                                                                                            1129
                                                                                                                                                                                                                                                                                   394
                                                                                                                                                                                                                                                                                                              334
                                                                                                                                                                                                                                                                                                                          973
                                                                                                                                                                                                                                                                                                                                                                    225
                                                                                                                                                                                                                                                        452
                                                                                                                                                                                                                                                                      1069
                                                                                                                                                                                                                                                                                                 1029
                                                                                                                                                                                                                                                                                                                                         274
                                                                                                                                                                                                                                                                                                                                                      913
```

망 50 polypeptide of Moraxella catarrhalis (OMP106 polypeptide). The polypeptide and its peptide fragments are useful for producing an immune response in an animal, and as ligands to detect antibodies elicited in response to M. catarrhalis infections. The polypeptide and its peptide fragment are further useful as active ingredients in vaccines against M. catarrhalis infections. The polypeptide is useful to prepare antibodies. An antibody binding the polypeptide is useful to prepare antibodies. An antibody binding the polypeptide is useful in immunoassays to detect M. catarrhalis infections. An antibody binding the polypeptide and its peptide fragment, and as probes for identifying clones in expression libraries that have inserts encoding the polypeptide and diagnose M. catarrhalis infections. The polypeptide is also useful to detect on an antibody binding the polypeptide and peptide fragment. An antibody binding the polypeptide and peptide is useful as a probe to identify the presence of M. catarrhalis in biological specimens by hybridisation or PCR amplification and also to detect other bacteria that might encode a polypeptide related to M. catarrhalis owerlos. The polypeptide, an antibody binding the polypeptide and the polypeptide fragment and the polypucleotide encoding the polypeptide, its peptide fragment and the polynucleotide encoding the polypeptide is also useful to catarrhalis infections and for scientific research on the properties of M. catarrhalis infections and infectivity of M. catarrhalis, as well as host defence mechanisms. The present sequence represents the amino acid sequence of M.catarrhalis outer membrane protein (OMP)-106. Query I Best La Matche WPI producing an antibodies e. Novel (ANTE 0 Claim 33; 2-NOV-0-MAR-2001 equence Local : (S >+ Match 200; DB; J 377 outer 32 ス 19 19 3-B ANTEX S \vdash KTLTIT တ် တ LYSEGE' Similarit Page 28-RSVSTTSCRDLQAITDYLKHHVFAAHRFSVIGSPDERDAALAHNEQIDJ ·328486/: 3X93525. 6 ~ membrane polypeptide of Moraxell n immune response in an animal, a elicited in response to Moraxella Pl 31.31 34 212 osil. N BIOLOGICS -Sn 100 N 97US-1 TPATIAETFAKAEKFDRLATTASSAFENTPFAAASVLQYMQ GGAQTSALTD ξ, **D** ct \mathbf{p} ij¥. 34; -0968685 -0642712 08132 T) 51pp; ₩ N < 20 0 \sim \sim نسو പര പര 4 20.00 English. 69 Score Pred.); Mis No No HNI GVVQNGDGLKVQLAETLTSLKMVTTENLTANE Moraxella tc. Q/ • 0.5 2 DB 1; a catarrhalis 81; N 4 54 ndels Length 1 (0 (0 ynosis of M.
properties of
s, as well as
the amino act AINKGDWLATPL ALVETRţ 139; 2122; useful for to detect Gaps ANR 427 88 23;

ANTEX BIOLOGICS INC.	(ANTE-)	YX XX
96US-0642	03-MAY-1	PR XX
		×
7; 97US-0968685.	12-NOV-1997;	P X
	10-APR-2001	PD
B1.	US6214981-B1	Y PZ
catarrhalis.	Moraxella	XX SO X
	70000	X
rane infec	Outer memb	2
catarrhalis outer membrane protein-106 (OMP10	Moraxella	XX
	•	××
1 (first entry)	02-JUL-2001	D ?
	AAE00701;	AC.
tandard; Protein; 2123 AA.	E00701 AAE00701 s	X I &
	RESULT 6	RE
DLT-	773	뭣
SAPEADIEEGGISAFSRSET 480	461	204
VKGGKTTADDLTKNNIGVVADSTDNSLTVKLAKTLSDLDAVNTKTLTASDKVTVDSGNN- 77	714 VK	D
DK-VKSTASSTTSYVADQTVKLAKTVKDMSGEAISSTGASLRSTVNNLRHR 46	411 DF	Qy
STANTEKSGSAATIKDLYNLSQVPLTFAGDTGPN	661 -0	Db
YAGVSKLQKMATKNITDSATKAAVSQLSNLVGSVGVFAGWTTAGLATDPAV-KKAESFIQ 41	352 YA	Qy
GFANNTGSLDANKPRLTPTGINAGGKELTNVQSAINPATNG 66	619 i-	B
LDAYKAIKSASYSGAALNAGKRMAGLPLDVATDGLKAVRSLVSATSLTKNGLALAGG 35	295 LI	Qy
TVGNSTLNNDGLSVKNTNSNKQIQV	559 NG	Db
STAGGL-VANAGFGDRMLSVQSRDQLRGGAFVLGMKDKEPKAALSEETDW 29	246 ST	Qy
KIITVGKNNKPDGTQVNTLKLKGENGVDVTTETNGTVTFGL 55	518 KI	DЬ
MAVSVKRHSPALGRQVVDMGIAVQTFSALMVVRTVLAPALASRPSVQGAVDFGV 24	192 MA	QУ
QKITKLTAGVVDDDAATYGQLKKVNQTAESALQTFTVKKVDKNGNDANDS 51	468 QK	D
KPLTPLISGALSGAMDQVGTKMMDRARGDLHYLSTSPDKLHDA 19	149 KP	Qγ
AT ACKT.	AU 025	ב ב

```
5
                                                                                                                                          Ųγ
                                                                                                                                                                                    Š
                                                                                                                                                                                                                           50
                                                                                                                                                                                                                                                                                       5
                                        4
                                                          Š
                                                                                밁
                                                                                                                        밁
                                                                                                                                                                 밁
                                                                                                                                                                                                         멍
                                                                                                                                                                                                                                                                                                             membrane protein-106 (OMP106). The OMP106 is used as a therapeutic and prophylactic vaccine against M. catarrhalis infections of mammal It is used for diagnosis of bacterial infections and as reagents for clinical or medical diagnosis of M. catarrhalis infections and for scientific research on the properties of pathogenicity, virulence and the presence of M. catarrhalis. It is also used as a probe to identify other bacteria that encode a polypeptide related to M. catarrhalis of the presence of m. catarrhalis in biological specimens and to identify of m. catarrhalis are used as ligands to detect antibodies elicited in response to M. catarrhalis infections and also useful in immunoassays to detect M. catarrhalis in biological speciments are useful in passive immunisations against
                                                                                                                                                                                                                                               Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                       as immunogens
useful in immun
Cytotoxic ant;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        membrane
infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI
N-P
                                                                                                                                                                                                                                                                                                                                                                                                                                                       The
                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mamma 1 s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tucke
                                                                                                                                                                                                                                                                                                                                                                                                Jent sequence is hembrane protein-106 (OMP and prophylactic vaccine to is used for diagnosicientificientific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           laim
                                                                                                                                                                                                                                                                                       equence
                                                                                                                                                                                                                                                                                                         eful in immunoassays t
totoxic antibodies are
catarrhalis.
                                                                                                                                                                                                                                                                    Ma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 2
                                        559
                                                                                                                      468
                                                                                                                                                                                                                                                            tch
                                                           246
                                                                                                    192
                                                                                                                                            149
                                                                                                                                                                428
                                                                                                                                                                                                         377
                    295
                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2001-281002/2
3; AAD04029.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7;
                                                                                                                                                                                                                                                 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nucleotide
                                                                                                                                                                                    68
                                                                                                                                                                                                                            32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ions
                                                                                18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ス
                                                                                                                                                                                                     RSVSTTSCRDLQAITDYLK:::: | |:||
|:||
KTLTITGGAQTSALTD---
                                                                                                                                                                                                                                         6.1%;
Similarity 22.2%;
1; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein-1
                                        NONNGLTVGNSTLNNDGLSVKNTNSNKQIQVGADG
                                                  STAGGL-VANAGFGDRMLSVQ-
                                                                                                  MAVSVKRHSPALGRQVVDM-
                                                                                                                       QKITKLTAGVVDDDAATYGQLKKVNQTAESALQTFTVKKVDKNGND-
                                                                                                                                                                KVTVGKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Column
                   LDAYKAIKSASYSGAALNAGKRMAGLPLDVATD-
                                                                                                                                                                                    LYSEGETPATIAETFAKAEKFDRLATTASSAFENTPFAAASVLQYMQP
                                                                               KI I TVGKNNKP DGTQVNT LKLKGENGVDVT
                                                                                                                                            KPLTPLISGAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plosila
                                                                                                                                                                                                                                                                                        23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            53-
                                                                                                                                                                                                                                                                                        <u>۸</u>
                                                                                                                                                                                                                                                                                                                                                                                                 nce is haemagglutinating Moraxell .06 (OMP106). The OMP106 is used raccine against M. catarrhalis in ignosis of bacterial infections and diagnosis of M. catarrhalis in the properties of pathogenian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sequences encoding Moraxella
06 polypeptide, useful for overcine against Moraxella co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           **
GFANNTGSLDANKPRLTPTGINAGGKELTNVQSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         49pp;
                                                                                                                                                                                                                                                          50.50
                                                                                                                                                                                                                            KHHVF
                                                                                                                                                                                                                                                 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Engli
                                                                                                                                                                                                                                                          D Q
                                                                                                                                                                                                                                               54
                                                                                                                                                                                                                                               Score 146.5;
Pred. No. 0.01
Mismatches
                                                                                                                                                                -RL-
                                                                                                                                                                                                                            AAHRFSVIG
                                                           -SRDQLRGGAFVLGMKD-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sh
                                                                                                  GIAVQTFSALNVVRTVLAPALAS
                                                                                                                                                                 TIDKI GFIND
                                                                                                                                                                                                       HNIGVVQNGDGLKVQLAETLTSLKMVTTENLTANE
                                                                                                                                                                                                                                                         146.
No.
                                                                                                                                            SGAMDQVGT KMMDRARGDLH
                                                                                                                                                                                                                                               DB. 011;
                                                                                                                                                                                                                            SPDERDAALAHNEQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        la catarrhali
r diagnosis c
catarrhalis
                                        : | :|
                  GLKAVRSLVSAT
                                                                                                                                                                                                                                                 \boldsymbol{\omega}
                                                                                                                                                                                                                                               <del>----</del>
                                                                                                                                                                                                                                                                    N
                                                                                                                                                                                                                                                                   N
                                                                                                                                                                -MNGIDESKP
                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                   Length
                                                          KEPKAALSEET
                                                                                                                                                                                                                                                                                                                                                                                                                           thera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ٠بر.
 \boxminus
                                                                                                                                                                                                                            D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \vdash \vdash \vdash \vdash \vdash
                                                                                                                                                                                                                                                                                                                                                          e to identify nd to identify atarrhalis
                                        GIENTTRI
                   SLIKNGLALAGG
                                                                                                   RPSVQGAVDFGV
                                                                                                                                                                                    AINKGDWLATP
 NPATNG
                                                                                                                                                                Y LDKDTGI HAGG
                                                                                                                                                                                                                            ALVETR-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bac
lfec
                                                                                                                                             EST.
                                                                                                                                                                                                                                                139
                                                                                                                                                                                                                                                                                                                                                                                                                                rapeutic
                                                                                ETNGTVTFGL
                                                                                                                                                                                                                                                                    N
                                                                                                                                            ďS
                                                                                                                                                                                                                                               **
                                                                                                                                                                                                                                                                                                                      which are speciment nst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tte
                                                                                                                                                                                                                                                                    w
                                                                                                                                                                                                                                                                                                                                                                                                                         mammal:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          eri
                                                                                                                                                                                                                                                                                                                                                                                                             for
                                                                                                                                            DKLHDA
                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                           outer
.c
                                                                                                                                                                                                                                                                                                                                                   also
                                                                                                                       ANDS
                                         Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  O)
                                                                                                                                                                                                                                                                                                                                                                                                                                   als
                                                                                                                                                                                                                                                                                                                                                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of
                                        RDG
                                                                                                                                                                                                                            ANR
                                                          £
                                                                                                                                                                                                                                                                                                                               are
                                                           294
                    351
                                                                                                   245
                                                                                                                                                                                    148
                                        618
 660
                                                                                                                        S
                                                                                                                                                                467
                                                                                                                                                                                                        427
                                                                                                                                                                                                                            \boldsymbol{\omega}
                                                                                                                       17
                                                                                                                                            91
                                                                                58
                                                                                                                                                                                                                            \boldsymbol{\omega}
                                                                                                                                                                                                                                                 23
```

34

ino

te

50

```
RESULT ABUS486
CC X S Y F F T N W O C 2 1 1 1 2 W H O B H H 12 AB C C C X S Y F T N W O C 2 1 1 1 1 2 W H O B H H 12 AB C C C X S Y F T N W O C 2 1 1 1 1 2 W H O B H H 12 AB C C C X S Y F T N W O C C 2 1 1 1 1 2 W H O B H H 12 AB C C C X S Y F T N W O C C C C X S Y F T N W O C C C C X S Y F T N W O C C C C X S Y F T N W O C C C C X S Y F T N W O C C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O C X S Y F T N W O 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4861
ABU5
                                                                             New CA125 mc monitoring t diagnosing, developing v
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human;
amino
                                                                                                                                                       WPI
N-P
                                                    Claim
                                                                                                                                                                                                                                                                                                                                                                                                                     Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human
                       The
                                                                                                                                                                                                  0'B
                                                                                                                                                                                                                              (UYAR-)
                                                                                                                                                                                                                                                                                                                                                                                        WO200283866
                                                                                                                                                                                                                                                                                                                                                                                                                                               ovarian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABU54861
                                                                                                                                                                                                                                                                                      7-APR-
                                                                                                                                                                                                                                                          7-
                                                                                                                                                                                                                                                                                                                                 N
                                                                                                                                                                                                                                                                                                                                                              4
                                                                                                                                                     ; 200;
SDB; /
                                                                                                                                                                                                  3rien
                                                                                                                                                                                                                                                          SE
                                                                                                                                                                                                                                                                                                                                                              OCT-
                      invent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            47
                                                                                                                                                                                                                                                                                                                                                                                                                  sapiens
                                                                                                                                                                                                                                                          Ç P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             198
                                                                                                                                                                                                                                                                                                                                 Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CA125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               352
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; CA125; F
                                                     -
                                                                                                                                                                                                                              •
                                                                                                                                                                                                                                                         .2001;
.2001;
.2001;
.2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     200
                                                                                                                                                                                                                                                                                                                                 200
                                                                                                                                                                                                                                                                                                                                                             2002
                                                    **
                                                                                                                                                       )3-093013/(
ABX72626.
                                                                                                                                                                                                                                                                                                                                                                                                                                              cancer;
                                                                                                                                                                                               Ä
                                                                                                                                                                                                                               VINU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50
                                                   Page
                                                                              molecules, useful

of the presence of C

of monitoring or tr

of vaccine against c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | |:|| |
VKGGKTTADDLTKNNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YAGVSKLQKMATKNITDSATKAAVSQLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DK-VKSTASSTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -GQLDFMNRLS
           ion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tanda
                                                                                                                                                                                                                                                                                                                                 N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APEADIEEGGISAFSRSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amino
                                                                                                                                                                                                  Beard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAKLQNGDLT-FSKQNT
                                                                                                                                                                                                                                                        2001US-
2001US-
2001US-
2001US-
                                                                                                                                                                                                                              ARKANSAS
                                                                                                                                                                                                                                                                                                                                 N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  £
                  ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Δ,
                                                     -
                                                                                                                                                                                                                                                                                                                                 00
                                                                                                                                                                                                                                                                                                                                                                                                                                              protein repear
extension; or
carcinoma.
           celates
domain
                                                      58-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rd;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    μ.
                                                                                                                                                                                                                                                                                                                                 2WO-US
                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                              J,
                                                     169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Þ
                                                                                                                                                                                                                                                            1 1 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entry)
                                                                                                                                                                                                                                                        -284175P
-299380P
-0965738
-345180P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TANTEKSGSAAT
                                                    50
g to
                                                                                                                                                                                                  Underwo
                                                   694pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              eat; chrocarboxy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GVVADSTDNS
                                                                              ul as a go
f CA125 ar
treating
t cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SYVADQ-
          CA1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Φ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tensi
                                                                                                                                                                                                  Ž.
          25 proamino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     788
                                                    Eng
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H ..
                                                                                                           gold
antig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KDLYNLSQVPLTFAG-
                                                    -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ⋧
                                                     ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                 old standard for detecting and tigen which can be used for patients with cancer or for -
                                                    Sh
                       O
                                                                                                                                                                                                                                                                                                                                                                                                                                                              erminal domain;
        tein comprising: (a) terminal extension;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TVKLAKTVKDMSGEAISSTGASLRSTVNNLRHR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VKLAKTLSDLDAVNTKTLTASDKVTVDSGN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NLVGSVGVFAGWTTAGLATDPAV-KKAESFIQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                             amino terminal vaccine; cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 --DTGPNVTKKLGEILK
         an extracellular (c) a multiple
                                                                                                                        and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          domain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              410
```

terminal domain comprises by year.

comprises 4 genomic exons, each repeat unit comprises a transmembrane anchoing some and the carboxy terminal domain comprises a transmembrane anchoing with a short cytoplasmic domain, and further comprises 9 genomic exons. The gene for CA125 is located on human chromosome 19q 13.2.

Also including variants, homologues and degenerate versions) encoding CA126 proteins or repeat units, a vector comprising the nucleic acid, a cultured cell comprising the vector, a method of expressing CA125 ant in a cell, the amino acid sequences of the CA125 repeat units (or their variants, fragments or sequences 50% identical to them), a purified antibody that selectively binds to an epitope in the capture of the presence of CA125 protein, a diagnostic for detecting monitoring the presence of CA125 antigen (comprising recombinant CA126 having at least one repeat unit of the CA125 repeat domain including epitope binding sites), a therapeutic vaccine to treat mammals with elevated CA125 antigen levels or at risk of developing a disease or disease recurrence associated with elevated CA125 antigen levels (comprising recombinant CA125 repeat domains including epitope bindir sites) and an antisense oligonucleotide that inhibits the expression CA125. The CA125 molecule, particularly the multiple repeat domains cuseful as a gold standard for detecting and monitoring the presence of CA125. The CA125 molecule, particularly the multiple repeat domains of the can be used for diagnosing, monitoring or treating patients with ovarian cancer and other carcinomas where CA125 is patients with ovarian cancer and other carcinomas where CA125 is patients. Query I Best La Matches repeat don terminal comprises S Match ò 4573 528 477 361 195 144 421 100 306 255 113 55 u SSMGDALASIS-Similarity 3; Conservat ____d) a c ___ain comprises 4 genomic exons, the carboxy +-₩. LATPLKPLTPLISGALSGAMDQVGTKMMDRARGDLHYLSTSPDKLHD-::|: :: || |:: AETFAKAEKFORLA-AGFGDRMLSVQSRDQLRGGAFVLGMKDKEPKAALS ! ITSTNTFT DVSTNPSTSLIMTESSGVT I TTQTGPTGAATQGPYLLDTS SS 10431 AAHRFSVIG PVSAT SVLTS Ą۶, 19.0 19.0 SPDERDAALAHNEQIDALVET RANRLYSEG RSTSQVASSATETSTVITHVSSGDATTHVTKTQATF 0 9 എ എം 87 Score Pred. 5. PGI ore 143; DB ed. No. 0.2; Mismatches TTASSAFEN-KIT 143; No. DMLNTSMEPVTNSPQNLNNPSNE EETDWLDAYKAI N 90; 4 -TTSCRDLQAI-TPFAAASVLQY ** TVTTI: Length Indels KSASYSGAALNAG tracellular a minal extensi เก 0 MQPAIN-GVS (J) 431 D. 204 PATS: domains -I I I esence LATLAAT LTETPLAV S ~ . ATSPMVP +1ecting ant CAL luding with AGGLVAN ISSPHQF binding ession (TLQGQH TPAT Gaps ancho VAMA KGDW eat antigen amino of ing 25 25 > - \mathbf{H} N 0 143 314 194 Φ 457 254 452 4420 5 4591 φ 4360 4 47 Φ 4 25 N 5.

δÃ

밁

20

日

8

밁

δõ

γ

밁

용

	teraces of the metalloprotease	3 8
	present sequence is metalloprotease YOMI of Bacillus s	3 6
		} ×
	Claim 4; Fig 1A-O; 59pp; English.	PS
		×
		' G'
	Compositions containing metalloprotease from Gram-positive	K G
	N-PSDB; AAX24980.	DR.
	IO.	DR
		×
		₽ ※
	(GEMV) GENEROOR INT INC.	PA
	GENENICOR	× ×
	15-SEP-1997; 97GB-0019636.	PR
	08-SEP-1998; 98WO-US18828.	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	25-MAR-1999.	XX D
	WO9914342-A1.	×Z
		×
	Bacillus subtilis.	200
	Gram-positive bacterium.	₹₹
	ซ	₹:
	Bacillus subtilis metalloprotease YOMI.	DE
	05-JUL-1999 (first entry)	X
		×
	AAW98149;	A ?
	RESULT 8 AAW98149 ID AAW98149 standard; Protein; 2285 AA.	RESI AAW ID
	SSPVSMSSVLTSSLVKTAGKVDTSLETVTSSPQSMSNTLDDISVTSAATTDI	망
	SYVADQTVKLAKTVKDMSGEAISSTGASLRSTVN	QУ
476	4710 SVVTEGFAHSKITTAMNNDVKDVSQTNPPFQDEASSPSSQAPVLVTTLPSSVAFTPQWHS	Дb
419		Qy
470	4650 PAQSTKFPDIFSVASSRLSNSPPMTISTHMTTTQTGSSGATSKIPLALDTSTLETSAGTP	망
386	362ATKSNLVGSVG :	γ,
464	EPTSSLTAGRKENSTLQEMNSTTESNIILSNVSVGAITEATKMEVPSFDATFIPT	Db
361	315 KRMAGLPLDVATDGLKAVRSLVSATSLTKNGLALAGGYAG-VSKLQKM : :	γ

Query Ma Best Loo Matches agricultu based on delete, u relatedne relatedness
appears to of heter animal metalloprotease and host cells and inactivated (by cleaving comprising a equence Loc Ma heterologous proteins, icultur tch фф 363 316 599 309 539 264 218 167 364 107 307 251 œ 659 481 74 21 15 7 ttural applications, on genetically engine, underexpress or overhess of the enzyme was of the enzyme feed used သေ recombinant ng a nucleic i mi [T] HNEQIDAL-IELYQRQAQVNVQNLNTRYGSSMGSSNRQAVQDYLN-NNFS I AQNAAKTAANS TGSAWSEQQ KY ADSLQARVNK LQNNF TEFA I A \vdash DLANSI RK-GTKMMDRARGDLHYLS \vdash LNMQFRELASNAQTAANQASSFG VQSRDQLRGGAFVLGMKDKEPKAALSE :: ::: KALEQIGISVKTAGGEAKS ALNVVRTVLAPALASRPSVQGAVDFGVSTA-[T] ·· KFDRLATTAS SAFENTPFAAAS VLQYMQPAINKGDWLATPLKPLTPLI : || |: :| :|:|
TQAAGSLLNASTGVIKSVGF KNI TDSATKAAVSQ IDT 2285 and o ilarity Conserva ij RTAS AALNAG applications, and advantageous strain improveme tically engineering a Gram-positive microorgani express or overexpress the enzyme. Due to over f the enzyme with Pseudomonas lash protein, YON a member of the M23 metalloprotease family. The se can be used in claimed cleaning compositions nd compositions for the treatment of textiles. for peptide hydrolysis, waste treatment and for GLP LMTNIRRVMNEPDYKYNELLare KTAQVLQNVSDLTPDDTVNTLTAAMLNFNIAANDSIS gene AA; DAS. LDVAT DGLKAV -AGS claimed. -VETRANRLYSEGET 20. LASS mutation fusion proteins. Expression acid (see AAX24980) encoding laimed. Gram-positive cells imutation or deletion) are use 05 TAS .5 8 SSVRSVSTTSO ത്രത TFGVELNDLIGYTTAIASTTRESGNIVGNSLKTIF -TSPDKLHDAMAVSVKRHSPALGRQV especially 80.80 08 Score Pred. 54 ASDLI SEVAGKWDTLSDAQKQNTS LPPLLAAVSTATLLLS RS Mismatches LVSAT CRDLQA PATIAETF 140; No. Æ LSNLVGSVGVFAGWTTAGLATD QESIDLGDTLSNKITDILQM enzymes, LTQTFKSMSTYL Ø ETDWL-1 0. 1-3 041 DYLKHHVF ; 224 20 DAYKAI KSASYS hormones, 5. KNTRTLASSLI KNGLALAGGused for ** GGLVAN-AVNSLNVS 'AAHRE SI Length the vector Indels GSLFYG which IADKL IGVA -VS N g G \leftarrow S yanism overall YOMI roduct for: ons, PΑ 5 TGSNNI RSQIQS FAEAKKAKDDF GIYQLS NEVDNNYAVTT AISGLKEMVSQA LGTRAMGQETLA YOMI SGALS .owth SAB S Θ 192 GDFGRMGFDE -VDMGIAVQTF The ents Ü DAFI PDE ARIGNNOS AGFGDRML -30 ct ion 9 g S CAMDQV RENAMM RDAALA Gaps Ħ DGLIE 69 ау QKMA AKA Ü 0 S S S 598 538 718 658 263 480 217 363 106 306 362 315 405 66 w 8 2 26; 0

В

9

밁

5

Ú

50

밁

밁

Ş

밁

8

Š

명

밁

δÃ

50

Š

밁

```
RESULT
ABB7173
ID AF
XX
AC AF
XX
 Ş
                                                                                                                                                                                                                                                                                                                                                 δõ
                                                                                                                                                                                                                                                                                                                                      吊
sequences (ABL01840-AB: (ABB57737-ABB72072).
The sequence data for specification, but was at ftp.wipo.int/pub/pul
                              useful in deve
cell-cell inte
insecticides,
discloses genc
                                                                                                                                                                                                                        Dro.
pha
                                                                                                                                                                                                                                                                   ABB71
                                                capable
useful i
                                                                                                  New
                                                                                                             Z E
                                                                                                                                                                                                 ₩02
                                                                                                                               Ven
                                                                                                                                           (PEKE
                                                                                                                                                                                                                                            D
                                                                                                                                                                                                                                                                               ABB71736
                                                                                                                                                                                                             Drosophila
                                                                                                                                                                                                                                                       N
                                                             The
                                                                                                                                                                                     N
                                                                         Disclosure;
                                                                                     genes from D
interactions
                                                                                                                                                        7
                                                                                                                                                                         23-MAR-
                                                                                                                                                                                                                                                                                     36
                                                                                                                                                                                                                                            o
L
                                                                                                                                                                                                                                                        6-MAR-
                                                                                                                                                        )-MAR-
                                                                                                              7
                                                                                                                                                                                                                        rmaceut:
                                                                                                             ; 2001-0
SDB; AB
                                                                                                                                                                                                                                           sophi
                                                                                                                                                                                                  0017104
                                                                                                                                                                                                                               sophila
                                                                                                                                                                                      EP
                                                                                                                                O
                                                             invention
                                                                                                                                                                                                                                                                    736
                                                                                                                                                                                                                                                                                                                                      779
                                                                                                                                                                                                                                                                                                                         437
                                                                                                                                                                                                                                                                                                                                                  406
                                          l in developmental cell interactions
                                                                                                  solated
                                                                                                                                           -
                                                                                                                               JC,
                                                                                                                                                                         2001;
                                                                                                                                                                                                                                                        2002
                                                                                                                                                        2000;
                                                                                                                                                                                      2001
                                                                                                                                                                                                                                                                                                               \mathbf{o}
                                                      of
                                                                                                             )1-65686(
ABL1583
                                                                                                                                                                                                                                            la.
                                                                                                                                           PΕ
                                                                                                                                                                                                                                                                                Ü
                                                                                                                                                                                                                                                                                                                                      O
                                                                                                                                                                                                                                                                                                              G
                        genomic
(ABL0184
                                                                                                                                                                                                                                                                                                             YDSQGNA.
                                                                                                                                                                                                                         iica
                                                                                                                                                                                                  \sim
                                                                                                                                                                                                                                                                                tandard;
                                                                                                                                                                                                                                                                                                                                      SQQTNVEAITTNKDS
                                                     ion relates detecting 1
                                                                                                                                                                                                              mela
                                                                                                                                                                                                                                                                                                                     DMSGEAIS:
                                                                                                                                           CORP
                                                                                                                                                                                                                                            300
                                                                                           Dr
                                                                                                                               Adams
                                                                         SEQ
                                                                                                                                                                                                  \rightarrow
                                                                                                                                                                                                                               developmental
                                                                                          nuclei
cosophi
                                                                                                                                                       2000US-:
                                                                                      - Ö
                                                                                                                                                                                                                                            lano
                                                                                                                                                                                                  N
                                                                                                                                                                         2001 WO
                                                                                                                                                                                                                                                        \overline{\phantom{a}}
                                                                                                                                                                                                                                                        fi
                                    therapeutics
                                                                                                              90
                                                                                                                                            ZY
                                                                         ID NO
                                                                                                                                                                                                              Ō
                                                                                                                                                                                                                                           ğa
                        40-AB
                                                                                                                                                                                                             gas
                                                                                                                                                                                                                                                        CO
                               DNA
                                                                                                                               Z
                                                                                                                                                                                                                                                        4
was obtained
o/published_pc
                                                                                                                                                                                                                                                                                Þ
                                                                                           ⊢ 0
                                                                                                                                                                                                                                                                                                                         STGASLRSTVNNLR
                                                                                                                                                                         -US09231
                                                                                                                                                        191637P
-0614150
                                                                                                                                                                                                                                                        ent
                                                                                                                                                                                                              ct
                                                                                                                                                                                                                                            (1
                                                                                                                                                                                                                                                                               rotein;
                                                                                            Þ
                                                       1000
                                                                                                 Ω,
                                                                                                                                                                                                              \mathbf{o}
                                                                                                                                                                                                                                            Φ
                         sequences
BL16175) an
            this
                                                                         42000;
                                                                                           cid
                                                                                                                                                                                                                                            н
                                                                                                                                Ľi
                                           Ħ.
                                   biology a
in higher
ics and pl
                                                                                                                                                                                                                                           pol
                                                             an
                                                                                                                                PWD,
                                                                                                                                                                                                                                                                                                                                      TDKLIQQY
                                                                                                                                                                                                                                                                                                               EKAI ENTK
                                                                                                                                                                                                                               biology;
                                                                                           fo
                                                                                                                                                                                                                                                                                                                                                  ESF
                                                       or
    patent d
                                                                                                                                                                                                                                           ypept
                                                                                                                                                                                                                                                                                1229
                        isolated nucleic acid detection reagent more genes from Drosophila. The invention is ogy and in elucidating cell signalling and gher eukaryotes for the development of and pharmaceutical drugs. The invention ces (ABL16176-ABL30511), expressed DNA) and the encoded proteins
                                                             isolated
                                                                                            4 4
                                                       more
                                                                        21pp
                                                                                           9 6
                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                               Муө
                                                                                           tion
 ct
                                                                                                                                                                                                                                                                                $
                                                                                                                                                                                                                                            Ω.
                                                                                                                                                                                                                                                                                                                                       否
            d;
                                                                                                                                                                                                                                                                                                                          45
                                                                          +
                                                                                                                                                                                                                                                                                                               Θ
                                                                                                                                н
                                                                                                                                                                                                                               Ü
                                                                                                                                                                                                                                                                                                               62
 e)
Le
                                                                                            Q.
                                                                                                                                                                                                                                                                                                                                      5
id not form electronic faquences.
                                                                                                                                                                                                                               e11
                                                                                                                                                                                                                                                                                                                          Θ
                                                                                                                                                                                                                                                                                                                                                  \Box
                                                                                                 н
                                                                                           cagent
                                                                                                                                EW;
                                                                                                                                                                                                                                                                                                                                  KVKESRSLTSDEEQEYLQVTQQLAQTFPALVK
                                                                                                                                                                                                                                                                                                                                                  KVKSTASSTTSYVADQ-
                                                                         equence
                                                                                                                                                                                                                               signalling;
                                                                                                                                                                                                                                            Q
                                                                                           cell:
                                                                                                                                                                                                                                            Ö
                                                                         Listing;
                                                                                                                                                                                                                                            42000
       format
                                                                                           r detecting
signalling
      of the printed directly from
                                                                                                                                                                                                                                insecticide;
                                                                         English
                                                                                                                                                                                                                                                                                                                                                   TVKLAKT
                                                                                           1000
and (
                                                                                           or m
                                                                                           more
        WIPO
                                                                                                                                                                                                                                                                                                                                                   436
                                                        15
```

RESULT
AAB7653
ID AJ
XX
AC AD
XX
AC AD 5 δÀ 2 40 5 8 밁 멍 밁 B δÃ Š SS XX 멍 밁 뮹 뮍 5 밁 Query Best I Matche tches LT 10 6536 AAB76536 Corynebacterium glutamicum; membrane construction and m hydrocarbon degradation; gr AAB76 Corynebacterium 11-APR-2001 Sequence Ma tch: 447 395 338 159 111 41 356 494 278 220 G w 7 211 166 al Similarity 107; Conser 23 4-4 6-4 0 S 8 69 9 4 O O. VKLATTS: (o TASSTTSYVADQTVKLAKT G YSSAPA VSHQYVSKPAVAISAAPA-DQLRGGAFVLGMKDKEPKAALSEET LSGAMDQ-DAALAHNEQID--ALVETRANRLYSEGETPATI-| ::: : ||| :: | -AYTYSKTTPGYSKVETYSSPGYSYGQISPGISRIATYSPSVSYSAP tanda KLQKMATKNI TDSATKAAVSQLSNLVGSVGVFAGWT IAVQTFSALNVVRTVLAPALAS-RLATTAS-SAFENTPFAAA-**GVAMESFRTASDASLAS** SGSGAVSHQYVSKPAVAIS N N (first φ rd; glutamicum S-SAFENTPFAAA---SVLQYMQPAINKGDWLATPLKPLTP
| : | ::|: |: |: |: |
SLLSSHGTGYSASYAPSITKYSQVSDVSHQYISKPIVAAYP Α, 5.7%, ty 20.9%; ervative T ent щ 0 tein; VGTKMMDRARGDLHYLSTSP-LAKVSYSQAADVSHQYI gram membrane transport protein; gram positive aerobic bacteri No. 24 MCI. -88 73; brevibacterium -277 Pro core -VRSVSTTSCRDLQAI protein Mismatches VKDMSGEAIS Ŋ. DWLDAYKAI-KSASYSGAALNAG -RPSVQGAVDFGVSTAGGLVANAG 138; No. | || | |:|: |:: AAPAIAKVATYAAPAIST-SEQ 0. S DB 025 lactofermentum; ort protein; petrobic bacterium; ID 444 629 -DKLHDAMAVSVKR ; 205 22; NO:5 TAGLATDPAVK Н ХQ 54 LKHHVFAAHRFSVI Length Indels Æ RHSPALGRQVVDM | |: | | -GSGAVSHQYVSK KAESFIQDK | :: | :: TATS LIS TIAKVS' GYGS KRMAGL NGLALAGGYAGV MCT, coleur mark (RMAGLPL---| |: --YAAAPVVTI म् 1 : TKVAAS AKAE 28 GDRMLSVQS 9 SDDY: ker ** QDKVKS XTP -s - 68 ΥT spi Gaps GHGA 997 -SAP PDE P : : GA. フ Ĥ S Ħ 553 605 415 355 493 446 1 277 O 58 N 67 _ φ ယ \vdash ∞ N 0 0 φ -50

```
WO2
               0
                Corynebact
(BA
      4-
7-
              Ϋ
00100
_
00
               805
AS
Ō
                0
AG
               N
0
Ö₩0
                Φ
                lut
              Ī
amicum
0000000000000000000000000000000
              В
O
              Ŵ
91779777999999777777777777779
              N
4483645800049778907789045804789877898
              O)
```

g H

dent:

⊕ ⊢-

.cation

51.51

E D

icr ene

ţ. 8

G H

gani eng

am in

H H

Q D

hemical

production;

transformation;

Ħ

Ħ

Z-X-P

P

⊘ →

2 DB

· 0

} 1−

T O 71 67

48 76

(O) (O)

80

0

שי

Ų.

Z

Ҡ

90

Đ Φ

H

B

Schroede

Zelder

O

Haberhauer

ç

μ. α

9

yneba

C

đ

eri

lut

amicum

nucle

nd me

ifyi

ane ng (

7

glu: Insp Iluti

CO DO

<u> 0</u>

Ħ

⊢ ↔

pr

0

đ

₽ O ⊢· 440

acids encoding memb their portions, use d bacteria, and as

membrane construction, useful for typing or d as markers for

ካ ወ

Cum

O

£ X X X A A A A A A A A A A X X X X X Š 50 δ 80 맑 50 문 Š 50 5 8 밁 몽 문 밁 뮹 Query Ma Best Loo Matches related bacteria identification of for mapping C. glu for mapping AAF68082 and const AAB76 ident Sequence example chemicals, O **C** 18 ra Loc M 76 im 7743 to Anteruction and m 6847. The MCT tification of 366 313 tch 582 118 ø 217 438 693 393 634 334 275 478 165 Ф 119 20 orma 67 38 26 J from imi '; AQQP and SAF [7] **QVGTKMMDRARGDLHYLS** !| :| :| :| :| :|
SALPTTVDTPRSARAVATVVAPESMRPFAVIS VIVHGMWTSAIGELIAGAAFNDEQIQTPAAKVVEY DGVLYLTQFTQVGMATL-VLEIVY FVLGMKDKEPKAALSEET DWLDAYKAI KSAS RPGMGEVRTVT Pag tion RDAALAHNEQ I DALVET RANRLY SLVSATSLTKNGLALAGGYAGVSKLQKMATKNITDSATKAAVSQLSN SALNVVRTVLAPALASRPSVQGAVDFGVSTAGGLVA--MGMEARRNSQAARAIWDRADAHTRNK ilarity 21.7 Conservative AAF68080 277 on of C. glutamicum
C. glutamicum genome
AAF68082 represent [1] the Φ **PGVAMES** ia (e.g. nd membrane transport (MCT) proteins MCT nucleic acids and proteins are us of microorganisms which can be used modulating fine chemical production 242-RRGLTMHRLVDRDENGLSNYALAALRPNKMGLTADNVFDYVA -ntpfaaasvlqymqp**ξ** AGLATDPAVKKAE present 246; FRTAS encode **1** 5 Brevibacterium lutamicum or re 1119pp; 7 DASLAS resent sequencing invention. ഈ അ genome, ** ** 28 GVAQI AEMREAHALNQRAY FAGHSVGEYNA **TSPDKLHDAMAVSVKRH** -TVNGNLthe Corynebacterium cansport (MCT) protes Score Pred. ; Mis Ö Mismatches English **SVRSVS** and as 138; No. related -VLTATAVVAAPSTFYAFPGQ -AINKGDWLATPLKPLTPLlactofermentum) +-3 0 production in YSGAALNAGKRMAGLPL markers DB 027 8 SEGETPATIAETFA-KAEKF CRDLQAIT DKVKS. ወ primers LGFS oteins given ; 219 ğ TATMLAPVL N N teria, ~ • TASSTTSYVA IVEIVENNPR 90 -NAGEGDRMLSVQSRDQLRGGA glutamicum LAERFAIRC SPALGRQV DYLKHHVF Length Indels which a RNPIHVS ď .PGE produce C. glut c. g Ţ glutami (T) :II: LVGSVGVF EVTVAGEKFFHP AAHRE DQTVKLAKTVKD DVAT DGLKAVR-VDMGI: GRKGNAVARTNT EFSVERS ference **AAYAGVLSLE** DVAAS Þ memb typing the 26 Φ ISGALSGAMD AAB765 Ф used DRLATTAS S I:I |:| |VLKSDV iicum Gaps -AVQT Φ 9 S SVS |: AGWT AVDN poin 9 10 ij S RS שי 0 Ü H Q an đ н 537 164 633 581 425 365 († 274 477 Φ 478 744 437 692 392 333 216 17 Q/

ŝ

Š

479

ETPFQLRRL

487

B

95

: !! :! DVPFHSSKL

803

50

MSGE

STGASLRSTVNNLRHRSAPEADI

H

£

S

 \rightarrow

AALRADVENRAP

GQRAFILIPGI

79

ASGEFLEI VNYNLAGLQYAVAGTQAGL

25-JUN-1
08-JUL-1
09-JUL-1
09-JUL-1
09-JUL-1
09-JUL-1
09-JUL-1
09-JUL-1
14-JUL-1
27-AUG-1
27-AUG-1
27-AUG-1 IT 1 5534 AAB AAB765 hydro 11-WO200100805 genome Corynebacterium Corynebac embrane 4-JAN-APRynebacter J \circ G arbon ficati 34 ω ·2001 10 ·2001 mapping N ,000 St O teri ons ion: andard; de \rightarrow E († 20 N ruc £i 99DE-99DE-99DE-99DE-99DE-99DE-99DE-99DE-99DE-99DE-99DE-99DE-99DE-99DE-99DE-99DE-99DE-99DE-OW00 glut gene glut glut micr Н α S Ø on antion; Protein; ent μ. 00 ami IBO amicum; and O ı; gr .gani cum 0 र्पु) engineer N memb ω MCI. 2012 breviba ש posi: $\boldsymbol{\sigma}$ ine ጅ **CT** t e H- d 0 O H C erium lactofermentum; MCT; ansport protein; petroleum e aerobic bacterium; marker hemical production; transfo Ħ SEQ ID NO:50 marker; transformation; spill;

```
50
                                                                                 50
                                                                                                    밁
                                                                                                                                                           5
                                            20
                                                                 밁
                                                                                                                                          밁
                           밁
                                                                                                                                                                             Query Ma
Best Loo
Matches
                                                                                                                                                                                                                                             AAF67743 to AAF6808 construction and me AAB76847. The MCT ridentification of related bacteria (eidentification of for mapping C. glus AAF68082 and AAF68
                                                                                                                                                                                                                                                                                                                                                             and membrane tridentifying C. transformation
                                                                                                                                                                                                                                                                                                                                                                                                              WPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                       Φ
                                                                                                                                                                                                                                                                                                                                             O
                                                                                                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                         Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          (BADI
                                                                                                                                                                                                                                                                                                                                             10
                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                    equence
                                                                                                                                                                                                                                                                                                                                                                                                                                        ompejus
                                                                                                                                                                                       Loc
                                                                                                                                                                                                 Ma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUG-
SEP-
SEP-
SEP-
                                                                                                                                                                                                                                                                                                                                             ij
                                                                                                                                                                                                                                                                                                                                                                                          ynebacterium
                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                              D
                                           شبو
                                                                                                                                                                                                  tch
                                                                                                                                                                                                                                                                                                                                                                                                              BN
                          طينوا
                                                                \mathbf{H}
                                                                                                     O
                                                                                                                                                                                        Ø
                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                            700
                                                                                                    48
                           60
                                             65
                                                                 80
                                                                                  18
                                                                                                                       67
                                                                                                                                          95
                                                                                                                                                                                                                                                                                                                                             N
                                                                                                                                                                                                                                                                                                                                                                                                                                                          \overline{\phantom{a}}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1999;
1999;
1999;
1999;
1999;
1999;
                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                             7
          J
                                                                                                                                                                                S Q
                                                                                                                                                                                                                                                                                                                                                                                                              ¾
                                                                                                                                                                                                                                                                                                                                                                                                                                                            BAS
                                                                                                                                                                                                                                                                                                                                                                                                                                        X,
                                                                                                                                          AHTA
                                                                                                                                                                               imi
''
                                                                                                                                                      AQQPPGVAMES
                                             O
                                                                                                     A
                                                                                                                      ERDAALAHNEQI DALVET RANRLY
                          VIVH@MWTSAIGELIAGAAFNDEQIQTPAAKVVEYTA
                                                                 S — S
                                                                                                                                                                                                                                                                                                                                                                                                              071
F67
                                              VGT
                                                                                                                                                                                                                                                                                                                                             Рa
                                                                 ALP
                                                                                 Æ
                                                                                                    TDGALKVSATADEVVDTDLGRLVI
N
                                                                                                                                                                                C
                                                                                                                                                                                                                    01
                                                                                                                                                                                                                                                                                                                                             Φ
                                                                                   ĮΨ
                                                                                                                                                                                                                                     AAF6808
                                                                                                                                                                                                                                                                                                                                                                                                              486/08
                                                                                                                                                                               ari
                                                                                                                                                                                                                                                                                                                                                                                 t
                                                                                                                                                                                                                                                                                                                                                                                                                                        Kroege
                                                                                                                                                                                                                                                                                                                                                                                                                                                           AG
                                                               Φ
                                                                                                                                           ď
                                              KMMDRARGDLHY LS
                                                                                                                                                                                                                    N
                                                                                                                                                                                                                                                              of micromodulation (e.g. of C. gl
                                                                                                                                          DVLVGRAWPAVE
                                                                                                                                                                                                                                                                                                                                                               ransport proglutamicum
                                                                                                                                                                                                                                                                                                                           08089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               φφφφφφ
                                                                                                                                                                                                                                                                                                                                             N
                                                                                                                                                                                                                                                                          d membrane transport (MCT)
CT nucleic acids and prote
of microorganisms which can
modulating fine chemical parts of the compact of the compac
                                                                                 -NTPFAAASVLQYMQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99DE-1041378
99DE-1041379
99DE-1041395
99DE-1042077
99DE-1042078
99DE-1042088
                                                                                                                                                                                                                    ĄĄ;
                                                                                                                                                                                                                                                                                                                                                                                         glutamicum
                                                                                                                                                                                        ťУ
                                                                                                                                                                                                                                                                                                                                             N
                                                                                                                                                                                Φ
                                                                                                                                                                                                                                                                                                                                              4
                                                                                                                                                                                rva
                                                                                                                                                                                                                                                                                                                                              - 1
                                                                                                                                                                                                                                              cami
)82
                                                                                                                                                                                                                                                                                                                                             N
                                                                                                                                                                                                                                                                                                                                                                                                                                         Ч
                                                                                                                                                                                                                                                                                                                                              w
                                                                                                                                                                                4
                                                                                                                                                             FRTASDASLASSSVRSVST
                                                                                                                                                                                                                                                                                                                          encode
                                                                                                                                                                                                                                       Ō
                                                                                                                                                                                                                                                                 glutamicum
                                                                                                                                                                                                                                                                                                                                              \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                         Œ
                                                                                                                                                                                 H- 10
                                                                                                                                                                                                                                       represent sequencent invention.
                                                                                                                                                                                                                                                         CUE I
                                                                                                                                                                               40
                                                                                                                                                                                                                                                                                                                                             31
                                                                                                                                                                                        ال دسر
                                                                                                                                                                                          7
                                                                                                                                                                                                                                                                                                                                                                                 О
                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                         예 예
                                                                                                                                                                                                                                                                                                                                                                         or re
                                                                                                                                          AAVKSAVI
                                                                                                                                                                                                                                                         genome,
                                                                                                                                                                                                                                                                                                                                              \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               80001008
                                                                                                                                                                                        34.34
                                                                                                                                                                                                                                                                                                                                                                                                                                         O
                                                                                                                                                                                                                                                                                                                                           9pp;
                                                                                                                                                                                                                                                                                                                                                                                           nucle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . . . . . . .
                                                                                                                                                                                85
                                              TSPDKLHDAMAVSVKRH
                                                                                                                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                                                                                                         ns or
relat
                                                                                                                                                                                                                                                                                                                                                                                                                                         oed
                                                                                                                                                                               S d ··
                                                                                                                                                                                core
red.
Mi
                                                                                                                                                                                                                                                                                                      port and
                                                                                                                                                                                                                                                                                             Corynebacteri
port (MCT) pro
and proteins
s which can be
                                                                                                                                                                                                                                                                  or
                                                                                                                                                                                                                                                                                                                                             Eng
                                                                                                                                                                                                                                                                                                                                                                                           μ.
                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                           O
                                                                                                                                                                                                Φ
                                                                                                                                                                                                                                                        related bacteria, and as markers for
                                                                                                                                                                                                                                                                                                                                                                          œ
C
                                                                                                                                                                                sma
                                                                                                    ----SEGETPATIAETFA-
:|| ||:|| ||
VRAEIADAEGNLIATLAERFAI
                                                                                                                                           ש
                                                                                                                                                                                        138;
No.
                                                                                                                                                                                                                                                                                                                                                                        acida
thei
d ba
                                                                                                                                                                                                                                                                                                                                             11
                                                                                                                                           ឡ
                                                                                                                                                                                                                                                                                                                                             3
                                                                                                                                                                               с
т
                                                                                                                                          Ŋ..
                                                                                 AINKGDWLAT
                                                                                                                                                                                                                                                                           h can be used tal production i
                                                                                                                                                                                                                                               eni
                                                                                                                                           S
                                                                                                                                                                               he.
                                                                                                                                                                                                                                                                                                                                                                          OHW
                                                                                                                                                             \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                         10
                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                           rt
                                                                                                                                                            SCRDLQAITDYLKHHVF
                                                                                                                                           XE.
                                                                                                                                                                                        DB
05
                                                                                                                                                                                                                                                                                                                                                                          6 9
                                                                                                                                                                                                                                                                                                                                                                                           enc
                                                                                                                                                                                (O
                                                                                                                                                                                                                                                                                                                                                                          13 O
                                                                                                                                                                                                                                               primer:
                                                                                                                                                                                                                                                                                                                  ro
                                                                                                                                                                                                                                                                                                                                                                           P- 13
                                                                                                                                          GMLSTATEH
                                                                                                                                                                                                                                                                                                                                                                                 # 8
                                                                                                                                                                                                                                                                                                                                                                          œ
                                                                                                                                                                                N **
                                                                                                                                                                                                 22
                                                                                                                                                                                                                                                                                                        Ø
                                                                                                                                                                                                                                                                                                                  (T
                                                                                                                                                                                                                                                                                                                                                                                  ling
ons
                                                                                                                                                                                                                                                                                                      re us
                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                9
                                                                                                                                                                                                 50
                                                                                                                                                                                                                                                                                                                  Φ
                            TMLAPVLPGE
                                                                                                                                                                                                                                                                            mentum)
                                                                                 PLKPLT
                                                                                                                                                                                                                                                                                                                 ı glutami
dins give
                                                                                                                                                                                                                                                                                                                                                                          Ø
                                                                                                                                                                               *
                                                                                                                                                                                                                                                                                                                                                                          nd.
        NAGFGDRML
                                                                                                                                                                                                 Leng
                                              S
                                                                                                                                                                                                                                                                                                                                                                                  membra
                                                                                                                                                                                Indel
                                            PALGRQV
                                                                                                                                                                                                                                                                                                      given
seful :
                                                                                                                                                                                                                                                                                    t to
                                                                                                                                                                                                                                                                                                                                                                         use
as 1
                                                                 RNP
                                                                                                                                          苦三
                                                                                  PL-
                                                                                                                                                                                                                                                         as
                                                                                                                                                                                                  H
                                                                                                                                                                                                                                                 Ç,
                                                                                                                                                                                                                                                                                    OB
                                                                 VHI.
                                                                                                                                                                                                                                                        C. glutamicum of the typing or s reference point ransformation.
                                                                                                                                                                                                                                                                                               Ř
                                                                                                                                                                                                                                                                                                                           O
                                                                                                                                                                                                                                                                                                                                                                          E 4 7
                                                                                                                                                                                                  N
                                                                                                     טכ
                           [F]
                                                                                                RGRKGNAVARTNT
                                                                                                                                                                                                                                                                                               n the
                                              ADMCI.
                                                                                                                                                                                                                                                                                                                                                                         for
kers
                                                                                                                                                                                                                                                 are
                           I EFSVERSAVDN
                                                                :: :|:|
SDVAASLAGLPG
                                                                                                                                                                                                  01
                                                                                                                                                                                                                                                                                              in h
         SVQSRDQLRGGA
                                                                                                                       AEKF DRLATTAS
                                                                                                                                                             AAHRESVIGSPD
                                                                                                                                                                                                                                                                                                                                                                                                                                         æ
                                                                                                                                                                                                                                                                                                                  membrane
n AAB7651
                                                                                                                                                                                                 2
                                                                                                                                                                                26
                                                                                                                                                                                                                                                                                                                                                                                   construction
or typing or
                                                                                 ISGALSGAMD
                                                                                                                                                                                                                                                                                                                                                                                                                                         G;
                                                                                                                                                                                                                                                                                                                                                                         typing
for
                                                                                                                                           VLKSDV
                                                                                                                                                                               Gaps
                                             AVQT
                                                                                                                                                                                                                                                 'n
                                                                                                                                                                                                                                                                  points
                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                     ဝူ
                                                                                                                                                                                                                                                 an
                                                                                                                                                                                                                                                                                                                  Ç
                           1219
          274
                                                                 1159
                                                                                   164
                                                                                                                      117
                                              216
                                                                                                     1107
                                                                                                                                          1047
                                                                                                                                                             9
                                                                                                                                                                               N
                                                                                                                                                                                ω
```

```
RESULT 12
AAG92485
ID AAG9
AAG92485
ID AAG9
AAG92485
AAG9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Λõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              뭉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                            Nakagawa
Tateishi
                                     WPI; 2001-376931/40
N-PSDB; AAH67704.
                                                                                                                                                   (KYOW
                                                                                                                                                                                                                                                                                                                                    EP1108790-A2
                                                                                                                                                                                                                                                                                                                                                                                                           Coryneform bacterium organic acid synthes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAG92485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAG92485
     Novel
                                                                                                                                                                                                                                                               18-DEC-
                                                                                                                                                                                                                                                                                                                                                                         Corynebacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-SEP-2001
                                                                                                                                                                                   16-DEC-1999;
07-APR-2000;
03-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                glutamicum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N
                                                                                                                                                                                                                                                                                                    JUN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            479
                                                                                                                                                   J
   polynucleot
                                                                                                                                                                                                                                                              .2000;
                                                                                                                                                                                                                                                                                                   2001
                                                                                                                                                 KYOWA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ETPFQLRRL: ||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MSGE:
                                                                                           z,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RPGMGEVRTVTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ù
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ASGEFLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FVLGMKDKEPKAALSEETDWLDAYKAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DVPFHSSKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tandard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -MGMEARRNSQAARAIWDRADAHTRNK
                                                                                           Mizoguchi
Senoh A,
                                                                                                                                                                                   99JP-(
2000JP-(
2000JP-(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first
                                                                                                                                                                                                                                                               2000EP-
                                                                                                                                                   HAKKO
                                                                                                                                                                                                                                                                                                                                                                        glutamicum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IVNYNLAGLQYAVAGTQAGL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGLATDPAVKKAESFIQ
     ides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               שי
                                                                                                                                                                                   -0377484
-0159162
-0280988
                                                                                                                                                   KOGYO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entry)
                                                                                                                                                                                                                                                               0127688
                                                                                                                                                                                                                                                                                                                                                                                                               ٠٠ ٠٠
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rotein;
                                                                                                                                                                                                                                                                                                                                                                                                              CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 fragment
                                                                                                                                                                                                                                                                                                                                                                                                                           amino
     der
                                                                                            H, Ando
Ikeda M,
     μ,
     ved
                                                                                                                                                   쫐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AISSTGASLRSTVNNLRHRSAPEADIEE--GGISAF---SRS
                                                                                                                                                                                                                                                                                                                                                                                                                               acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TVNGNL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ
     OH
                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A
                                                                                              02
                                                                                                                                                                                                                                                                                                                                                                                                                             synthesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ID
     Coryneform bacteria,
                                                                                              Ü
                                                                                               Hayashi M,
aki A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AALRPNKMGLTADNVFDYVA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SASYSGAALNAGKRMAGLPLDVATDGLKAVR-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VLTATAVVAAPSTFYAFPGQGIQSQG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6239.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DKVKSTASSTTSYVADQTVKLAKTVKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -LGFSIVEIVENNPREVTVAGEKFFHP
                                                                                                                                                                                                                                                                                                                                                                                                                               vitamin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AALRADVENRAPGQRAFILIPGI
                                                                                                              Ochiai
                                                                                                                                                                                                                                                                                                                                                                                                                               saccharide;
                                                                                                              ᄌ
     for
                                                                                                              Yokoi
     identifying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -SVSE
                                                                                                              H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          437
```

Ş 50 δÃ δÃ 밁 40 δõ 50 뮹 밁 밁 밁 밁 Query Best I Matche tches amino acids, particularly in the exempl mutation expression analy from spe Eur Claim Note: The sequence specification, but S mutant C re equence equences Loc Ма opean useful 1138 Coryneform bacterium, and identificoryneform bacterium. Coryneform 217 19 078 11 tch res 334 250 \vdash -0 (L) N 275 18 67 65 25 93 4 φ of larly L-lysine. The exemplification of Ó J J Simi 9; on pro en 30 Patent nt invention provion from the Corynefor the corynefor identifying the state of the corynery of | || : | :|:| ||
PTDGALKVSATADEVVDTDLGRLVI SALPTTVDTPRSARAVATVVAPESMRPFAVISGD ERDAALAHNEQIDALVETRANRLY **AQQPPGVAMESFRTASDAS** QVGTKMMDRARGDLHYLSTSPDKLHDAMAVSVKRH-AHTAPDVLVGRAWPAVFAAVKSAVI RPGMGEVRTVTA-DGVLYL FVLGMKDKEPKAALSEETDWLDAYKAIKSASYSGAALNAGKRMAGLPLDVATDGLKAVR-¥ coryneform SEQ SLVSATSLTKNGLALAGGYAGVSKLQKMATKNITDSATKAAVSQLSN SALNVVRTVLAPALASRPSVQGAVDFGVSTAGGLVA-MGMEAR RNSQAARA I WDRADAHT 29 ilarity Conserva nucleic L-lysin VYRRGLTMHRLVDRDENGLSNYALAALRPNKMGLTADNVFDYVA O 1 Ü H \mapsto ¤ H- 0 TQFTQVGMATL--NTPFAAASVLQYMQP-A, Offi m ě AGLATDPAVKKAESFIQö œ dat Was m bactors • • Q Ϋ́ e ct O. ac 5. 21. ive 6239 Ò patte Ve Ø yneform ids, 78 for gr ФГ 50 present sequence is the invention.

This patent did nowained in elector the rium, meas... profile or expression, and identifying a homol and identifying a homol or this cained i me the GVAQI des 24 בט \mathbf{a} -TVNGNL LASSSVRSVSTTSCRDLQAITDYLKHHVF Ç Score Pred. 5; Mis of ddg bacterium e mutation Ø measuring expression e or expression patte AEMRE, + (C) .smat Ω̈́ VRAEI ADAEGNLIAT LAERFAIR שי 138; No. gene GTDSASVVEGMLS Sequence VLTATAVVAAPS HALNORAY FAGHSVGEYNA AINKGDWLAT ches 0 point of nucleotide and Corynebacterium Ċ DB 089 551 SEGETPATIAETFA-DKVKSTASSTTSYVA LGF o a on of 22 Listing; homologue of. 9 th of (i) 50 are pattern : : | IVEIVENNPR -NAGFGDRMLSVQSRDQLRGGA THHETHATS form rmat : STFYAFPGQ(Leng SPALGRQV m D nd organ cotein d gene d useful RNPIHVS ndels amour rn of par dir ene .ng Engl 片 0 N ㅈ **0** rt analysing omologous VDMGI-GIQSQGdescribed DQTVKLAKTVKD EVTVAGEKFFHP :: : || IEFSVERSAVDN :: :|:| SDVAASLAGLPG AAHRFSVI GSPD LVGSVGVFAGWT GRKGNAVARTNT **AEKFORLATTAS** protein lutamicum. erived fro 93; of t1 for sh. AAYAGVLSLE 26 D. ISGALSGAMD gene gene the pr producing acids, VLKSDV from G der AVQT aps derived inted the gen These ເນ ved ģ 274 1189 117 216 1137 437 392 333 077 249 293 40 34 S Q) N ω 4

S

맑

05

SVSE

```
RESULT 1:
AAR48993
ID AAR
XX
  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      80
the paracrystalline S-layer protein. The rsaA ge production of the heterologous protein of the in heterologous protein of the in heterologous protein is produced by cloning a posequence, eg. cellulase, xylase or a metallothic restriction site within the rsaA gene which pres frame and expressing the fusion sequence in Caul layer protein bacterial system can be used in bi bind toxic metals in sewage waste water etc. or
                                                                                                                                                                                                                                                                                                                                C. crescentus;
cellulase; xyl
reading frame;
                                                                                                                Prodn. of he
Caulobacter
sequence and
                                                                                                                                                                                    Bingle
                                                                                                                                                                                                                                                                                                                        waste
                                                                                                                                                                                                                                                                                                                                                                                                                                AAR489
                                                                                                                                                                                                                                                                                                                                                                        rsaA
                                                                                                                                                        WPI; 1994-066249/09
N-PSDB; AAQ57972.
                                                                                                                                                                                                                                                                                    8
                                                                                                 Claim 17;
                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                              N
                                                                                                                                                                                                                                                                                                      Caulobacter
                                                                                                                                                                                                                                                                                                                                                                                          -
                                                                                                                                                                                                                                                                                                                                                                                                              AAR 48993
                                                                                                                                                                                                                                                                 10-DEC-1993
                                                                                                                                                                                                        (UYBR-)
                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                           4-SEP-
                                                                                                                                                                                                                           JUN-
                                                                              (a
                                                                                                                                                                                                                                             FEB-1993;
                                                                                                                                                                                                                                                                                    09054
                                                                                                                                                                                                                                                                                                                                                                       S-lyaer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        438
                                                                                                                                                                                                                                                                                                                       ng frame;
water; v
                                                                                                                                                                                                                                                                                                                                                                                                                                  φ
                                                                                                                                                                                    WH,
                                                                                                                                                                                                                           1992
                                                                                                                                                                                                                                                                                                                                                                                           -
                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
                                                                                                                                                                                                        VIND
                                                                                                                                                                                                                                                                                    Θ
                                                                                                                                                                                                                                                                                                                                                                                            φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ETPFQLRRL: !!
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MSGE
                                                                                                                   er - by expression of a and a bacterial S-layer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DVPFHSSKL
                                                                                                                                                                                                                                                                                                                                                                                            9
                                                                                                Fig
                                                                                                                                      heterologous
                                                                                                                                                                                                                                                                                                                                                                                                                                tanda
                                                                                                                                                                                                                                                                                                                                                                                            1
                                                                                                                                                                                                                                                                                                                                           xylase;
                                                                                                                                                                                      Smit
                                                                                                                                                                                                                                                                                                      O
                                                                                                                                                                                                                                                                                                                        wood
                                                                                                                                                                                                        BRITISH
                                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                           \overline{\phantom{a}}
                                                                                                 6
                                                                                                                                                                                                                                                                                                                                                                                           14
                                                                                                                                                                                                                                                                                                       escentus
                                                                                                                                                                                                                                                                                                                              rsaA; paracrystalline
se; metallothionein;
fusion protein; biore
                                                                                                                                                                                                                                                                                                                                                                                                                                rd;
                                                                                                                                                                                                                           92US-
                                                                                                                                                                                                                                              93CA-
                                                                                                                                                                                                                                                                                                                                                                                           irst
                                                                   encoded by ine S-layer
                                                                                                                                                                                     J,
                                                                                                27pp;
                                                                                                                                                                                                                                                                                                                       pulp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1515
                                                                                                                                                                                                                                                                                                                                                                                                                                Protein;
                                                                                                                                                                                                                                                                                                                                                                                           en
                                                                                                                                                                                                                                              20905
                                                                                                                                                                                                                           0895367
                                                                                                                                                                                                        COLUMBIA
                                                                                                                            polypeptides
sion of a fu
                                                                                                English.
                                                                                                                                                                                                                                                                                                                       suspensi
                                                                                                                                                                                                                                              49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AISSTGASLRSTVNNLRHRSAPEADIEE-
                                                                    protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                 1026
ne C. crescentus rsaA gene and represents rotein. The rsaA gene was used in the sprotein of the invention. The ced by cloning a polypeptide coding se or a metallothionein, into a saA gene which preserves the rsaA reading on sequence in Caulobacter. This S-n can be used in bioreactors, eg. to aste water etc. or for the treatment of
                                                                                                                  pro
                                                                                                                             fusi
                                                                                                                                                                                                                                                                                                                        ne; S-layer; p; restriction reactor; toxic cell surface:
                                                                                                              Jun prod.
Stein der
                                                                                                                            n bacteria, partic.
on prod. of the polypeptide
                                                                                                                                                                                                                                                                                                                        or; toxic metal; susurface; vaccine;
                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -AALRADVENRAPGQRAFILIPGI
                                                                                                                                                                                                                                                                                                                                           protein;
n site;
                                                                                                                                                                                                                                                                                                                         sewage;
e; fish.
                                                                                                                                                                                                                                                                                                                                                    heterologous;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -GGISAF-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -SRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        478
```

RESULT
AAW3749
ID AV
XX
AC AV
XX
DT 20 50 80 Š 밁 밁 70 δδ. 8888888888 Ş 몽 ۸٥ 8 80 8 50 멍 맑 문 맑 Query Ma Best Loc Matches wood pulp suspensions. The system c proteins at the cell surface for use vaccines. The S-layer protein is sy has a general repetitive sequence, p amounts of heterologous protein as a the cell surface. AAW37 AAW3 49 0-APR-Loca 0 1 quenc Ma 4 ٠J tch 490 186 385 328 342 282 243 ---49 445 385 30 74 29 82 82 42 98 N 22 فينه هيو 0 1998 0 Ø Ф Simi 2; VETRAN: TLN-| | : | :| |: :||
VSYAQTVATAYDKIIGNAVAT-<u>ა</u> — S VGVFAGWTTAGLATDPAVKKAESF GALSTDNAAGVNL DKLHDAMAVSVKRHSPALGRQVVDMGIAVQTFSALINVVRTVL-VDSTTNTNDLNDAYYSK-Ġ H S TKNGLALAGGYAGVSKL-KEPKAALSEET DWLDAYKAI KSASYSGAALNAGKRMAGLPLDVATDGL GVST DASLASSSVRSVSTTSCRDLQAIT LSGGAGT SVLQYMQPAINK-₩. 1-3 († 026 446 C F ari TSS AGGLty erva $\mathbf{\alpha}$ AFVRANTI DVLNWVQA 50 GVT 4 Ъ rt 5.7% 21.2% ive 0 **GLTALNTNTSGAAQTVTAGAGQNLTATTAAQAANNV** RLYSEGETPAT -GDWLATPLKPLTPLISGALS ם VANAGEGDRMLSVQSR-DQLRG::| | | | | | ANSAASGTVSVS 40.00 _ S \vdash Score Pred. 0 core N Q/ IA use in vaccines, partic. Is synthesised in large quane, permitting the synthesis as a fusion product and pro use Ą Ø [1] DYLKHHVFAAHRF matche: 136; No. can TFAKAEKF AAVTA FAQENRFINFSINLATGAGAG YQFFTGVAPSAAG þe 0 02 02 Ú used **QKMATKNITDSATKA** φ **AAGVDVAAAVAFLS** 15 LNAAT GAMDQVGTKMMDR 65 80 SVIGSP ď DRLATT LPTGVTISGI ~ Leng S Indel Q DERD H ASS GGY A ΑP ū - \mathbf{r} \triangleright AVTVAQTAGNAVN LKAVRSLVSATSI :: : : : : :: IETM-NVTSGAAI RQANIDYLTheterologous fish antities and is of large 026; KTVKDMSGEAIS AVDGGANVTVAS EVAGAATLTVGD ARGDLHYLSTSP AVSQLSNL-VGS TATAAMINDLS LASRPSVQGAVD AALAHNEQIDAL FENTPFAAA---| |||| |--ATAFAAAYTG is of lar 140 GAFVLGMKD LDFL ge on iΗ U at 82 384 281 242 185 129 81 444 327 341 285 225 438 384 28 ω

```
40
                       망
                                                                                                                                          The present sequence represents a Caulobacter S-layer protein used in an Cambridge of the present invention. A new DNA construct has been developed which contains at least one restriction site for insertion of DNA constructs above additionally region of at least the last 82 amino acids (aa) of Caulobacter S-layer protein. Caulobacter containing the the DNA constructs above additionally containing a sequence encoding a heterologous polypeptide, are particularly useful in live vaccines (where the heterologous polypeptide is an antigen). They can also be used for production of e.g. ligands, enzymes or other proteins, e.g. xylanase or cellulase for use in wood pulping. All known Caulobacter strains are harmless, and stable in outdoor environments, including water (so suitable for vaccinating fish) or soil. They are well suited for growing in biofilm reactors and produce S-layer proteins, which is an ideal system for presentation of antigens, at high level.
                                                                      Query Ma
Best Loo
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1997-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S-layer; rsaA g
metallothionein
                                                                                                                                                                                                                                                                                                                                                                         New DNA containing sequence for S-layer protein - expressed as peptides in Caulobacter, useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9734000-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bingle WH,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Caulobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          wood pulping.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Caulobacter
                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12-MAR-1996;
                                                                                                                                                                                                                                                                                                                                                   Example 2; Fig 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (UYBR-) UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -MAR-1997;
                                                                                               Ma
                                                                                               tch
                                                                                  ä
                       42
                                                                        101
                                                                                                                                                                                                                                                                                                                                                                                                                          97-470880/43.
AAV01866.
                                                                                   Similarity
                      SDAAALTNTLKLVNSTTAVAIQT
                                               SDAS LASS SVR SVSTT SCRDLQAIT DYLKHHVFAAHRFSVIGSPDERDAALAHNEQIDAL
                                                                        5.0
                                                                                                                        1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nomellini
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  O
                                                                        Conse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BRITISH COLUMBIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rescentus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     jene; Cau
); heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96US-0614377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97WO-CA00167
                                                                                                                       AA;
                                                                        EVZ
                                                                                                                                                                                                                                                                                                                                                  58pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Caulobact
                                                                      5.5%
21.0%
tive
RLYSEGETPAT IAETFAKAEKF-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ហ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -layer
                                                                                   Sec. 54.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Smit
                                                                      75;
                                                                                   Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        water
                                                                                                                                                                                                                                                                                                                                                                                       r C-terminal fusion prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rsaA
                                                                      ore 132; DB
ed. No. 0.06
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ų.
                                                                                                                                                                                                                                                                                                                                                                            as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ס
                                                                                                                                                                                                                                                                                                                                                                       erminal region of Caulobacter
on proteins containing antigenic
ive vaccines
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sewage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rotein.
                       -YQFFTGVAPSAAG--
                                                                     ; DB 18;
0.063;
ches 166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     antigenic; ligand; enzy
je; xylanase; cellulase;
                                                                                              Length 1026;
                                                                        Indels
                                                                        140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   enzyme;
                       --LDFL
                                                                        Gaps
                         130
                                                13
                                                                        23;
```

δõ

-DRIATTASSAFENTPFAAA-

D	:: : : : : :
Qy	129 -SVLQYMQPAINKGDWLATPLKPLTPLISGALSGAMDQVGTKMMDRARGDLHYLSTSP 185
Db	NAVA
Qy	186 DKLHDAMAVSVKRHSPALGRQVVDMGIAVQTFSALNVVRTVLAPALASRPSVQGAVD 242
ВЬ	174AFVRANTPETAAADIDLAVKAALIGTILNAATVSGIGGYATATAAMINDLSD 225
Qy	243 FGVSTAGGLVANAGFGDRMLSVQS-RDQLRGGAFVLGMKD 281
Db	226 GALSTDNAAGVNLFTAYPSSGVSGSTLSLTTGTDTLTGTANNDTFVAGEVAGAATLTVGD 285
Qy	282 KEPKAALSEETDWLDAYKAIKSASYSGAALNAGKRMAGLPLDVATDGLKAVRSLVSATSL 341
뫄	H
Qy	342 TKNGLALAGGYAGVSKLQKMATKNITDSATKAAVSQLSNL-VGS 384
Вb	328 TLNTSSGVTGLTALNTNTSGAAQTVTAGAGQNLTATTAAQAANNVAVDGRANVTVAS 384
QУ	385 VGVFAGWTTAGLATDPAVKKAESFIQDKVKSTASSTTSYVADQTVKLAKTVKDMSGEAIS 444
ф	385 TGVTSGTTTVGANSAASGTVSVSVANSSTTTTGAIA-VTGGTAVTVAQTAGNAVN 438
QY	445 ST 446
DЬ	439 TT 440
RESULT 15 AAY44757 ID AAY4	T 15 757 AAY44757 standard; Protein; 1026 AA.
X	
_	
XX	
_	Caulobacter crescentus surface layer protein.
	er protein; S-layer secretion signal; anti
	recombinant fusion protein cleavage; enzyme; protein polymer; antibacterial enzyme; foodstuff.
20	Caulobacter crescentus.
- •	Kov Tocation/Oualifiers
7 F	/not
7 T	n comprising a targ
	() () () () ()
VY Y	WO200004170-A1.

```
40
                                                                                                                                                                                   Qy
                        40
                                                    뮹
                                                                            δõ
                                                                                                       밁
                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                     The patent discloses a method for cleaving a recombinant fusion protein which is produced by Caulobacter and consists of Caulobacter surface Clayer (S-layer) protein (containing the C-terminal secretion signal) and a target protein heterologous to Caulobacter. The cleavage of target conditions so that cleavage occurs at aspartate—
C proline dipeptide site without solubilising the protein.
C Ine cleavage is accomplished while the fusion protein is in an insoluble aggregate form which facilitates purification of the protein. The method is useful for producing pure proteins including recombinant human and animal therapeutic antibiotic and vaccine peptides, enzymes, protein polymers, and antibacterial enzymes for foodstuffs.
C The present sequence is a S-layer protein from C. crescentus.
C The S-layer secretion signal, corresponding to the C-terminal portion of the protein from amino acid 690 onwards, is fused with a target sequence of construction of a recombinant fusion construct which is expressed in C Caulobacter.
                                                                                                                                                                                                             Query Match 5.5%;
Best Local Similarity 21.0%;
Matches 101; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cleavage c
producing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2000-182434/1
N-PSDB; AAZ50079.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Smit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27-JAN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14-JUL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 1;
                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (UYBR-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ç
                                                                             129
                         186
                                                   130
                                                                                                       82
                                                                                                                                 82
                                                                                                                                                           42
                                                                                                                                                                                      22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1998;
                                                                                                     VETRAN-----RLYSEGE
|:: | ||:
VDSTTNTNDLNDAYYSK--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                  VSYAQTVATAYDKIIGNAVAT
                                                                                                                                                          SDAAALTNTLKLVNSTTAVAIQT
                                                                                                                                                                       SDASLASSSVRSVSTTSCRDLQAITDYLKHHVFAAHRFSVIGSPDERDAALAHNEQIDAL
                         DKLHDAMAVSVKRHSPALGRQVVDMGIAVQTFSALNVVRTVL--
                                                                 -SVLQYMQPAINK--GDWLATPLKPLTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              f Caulobacter produced vaccine peptides -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pages 21-23;
                                                                                                                                                                                                                                                                   1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BRITISH COLUMBIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98CA-2237704.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-CA00637.
                                                                                                                                                                                                                                                                   λĄ;
AFVRANTPFTAAADI DLAVKAALI GTI LNAATVSGI GGYATATAAMINDLSD
                                                                                                                     -RLYSEGETPATIAETFAKAEKF----DRLATTASSAFENTPFAAA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      33pp;
                                                                                                                                                                                                             ; Score 132; DB
; Pred. No. 0.06
75; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               reco
                                                                                                                                                                                                                                        <u>μ</u>
                                                                                                       ч
                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mbinant
                                                                                                       LISGALSGAMDQVGTKMMDRARGDLHYLSTSP
                                                                                                                                                    :
-YQFFTGVAPSAAG-
                                                                                                                                                                                                                            ; DB 21;
0.063;
                                                     AAGVDVAAAVAFLSRQANIDYLT-
                                                                                                                                                                                                                 166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fusion
                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              proteins
                          -APALASRPSVQGAVD
                                                                                                                                                                                                                                           1026;
                                                                                                                                                                                                                140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               useful
                                                                                                                                                             --LDFL
                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for
 225
                          242
                                                                               185
                                                                                                        129
                                                                                                                                                             18
                                                                                                                                                                                       81
                                                      173
                                                                                                                                  128
```

망

밁	Qy	용	ν,	뭣	Qy	뫄	9	뭣	Qy
439	445	385	385	328	342	286	282	226	243
439 TT 440	ST 446	ANSAASGTVSVS	VGVFAGWTTAGLATDPAVKKAESFIQDKVKSTASSTTSYVADQTVKLAKTVKDMSGEAIS 444	TSSGVTGLTALNTNTSGAAQTVTAGAGQNLTATTAA	TKNGLALAGGYAGVSKLQKMATKNITDSATKAAVSQLSNL-VGS 384	TLSGGAGTDVLNWVQAAAVTALPTGVTISGIETM-NVTSGAAI 327	'KAI KSASYS	ILFTAYPSSGVSGSTLSLTTGTDTLTGTANNDTFVAGEVA	243 FGVSTAGGLVANAGFGDRMLSVQS-RDQLRGGAFVLGMKD 281
		ω	47	42	42	7		U,	,

Search completed: |
Job time : 49 secs January 6 2004, 09:44:21

> Copyright GenCore (c) 1993 version - 2004 5.1.6 Compugen Ltd.

OM protein protein search, using sw model

Run on: January 6 2004, 09:38:14 ; Search time 20 Seconds (without alignments) 2341.707 Million cell updates/sec

Title: Perfect score: Sequence:

US-09-825-414-66 2407 1 MHINQSAQQPPGVAMESFRT .EEGGISAFSRSETPFQLRRL

Scoring table: BLOSUM62 Gapop 10.0

283308 seqs, Gapext 0.5

96168682

residues

Searched:

number of, hits satisfying chosen par ameters: 283308

Minimum Maximum DB ECC

seq seq length:
length: 0 20000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 su

summaries

Database 4 3 :: P PIR_76:+
: pir1:+
: pir2:+
: pir3:+
: pir4:+

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

ď

Result No.	Score	Query Match	Length	DB	ID	Description
- L	149.5	6.2	2155	2	AD2742	conserved hypothet
2	149.5	6.2		N	C97523	hypothetical prote
ω	149	•	989	N	AE3045	ice nucleation pro
4	149	•	1009	Ν	G98240	hypothetical prote
ហ	143.5	•	2055	N	T31110	extracellular matr
თ	141	•		N	D84325	Htrl7 transducer
7	140.5	5.8		N	Н89960	hypothetical prote
89		•	2285	2	T12796	probable trans
9	_	5.7		N	G64887	probable tail fibe
10	138	•	1731	2	AB3045	ice nucleation pro
11		•		2	B98241	hypothetical prote
12	135	5.6	971	7	В90835	probable tail fibe

flagellin - Woline	5586	N	-	•	1.	45
hypothetical prote	8992	N	71	•	12	44
Htr6 transducer [i	8423	N	78	•		43
class I heat-shock	8372	N	54	•	7	42
chaperonin groEL -	C606	N	54	•	12	41
	3443	N	23	•	ω	40
hypothetical prote	3578	N	14	•	•	39
phage lambda-relat	1496	N	97	•	ω	38
tail fiber protein	1465	N	98	•	ω	37
FmtB protein [impo	9001	2	48	•	12	36
plasmid replicatio	0832	_	12	•	12	35
	2907	N	32	•	12	34
pathogenicity isla	H085	N	40	•	12	33
sipC protein - Sal	7021	N	40	•	12	32
minor tail protein	7560	N	22	•	5	31
hypothetical prote	8732	N	90	•	5	30
hypothetical prote	9007	N	27	•	9	29
ascites sialoglyco	5357	N	63	•	9	28
	4114	Ν	13	•	<u>.</u>	27
hypothetical prote	H255	N	01	•	12	26
nccB protein - Alc	3957	N	39	•	12	25
beta spectrin, bet	E027	N	38	•	ω.	24
methyl-accepting c	8732	N	63	•	12	23
conserved hypothet	8165	N	43	•	12	22
S-layer protein Rs	8737	N	07	•	13	21
paracrystalline su	4899	2	02	•	13	20
sspC protein - Sal	7054	N	40	•	13	19
conserved hypothet	H263	N	24	•	*	18
streptococcal hema	9741	2	21	•	• •	17
probable membrane	5931	N	10	•	2	16
hypothetical prote	8758	N	65		2	15
probable hemolysin	AC0304	N	2535	5.6	134	14
probable membrane	8569	Ν	97	5.6	Û	13

ALI COMENTS

protein Atul348 [imported] Agrobacter Ħ tume m ac iens

tumefaciens

#sequence_revision 11-Jan-2002 #text _change ŻΟV 20 Ŏ 2

RESULT 1
AD2742
conserved hypothetical protein (strain C58, Dupont)
C;Species: Agrobacterium tumef
C;Species: Agrobacterium tumef
C;Date: 11-Jan-2002 #sequence_
C;Accession: AD2742
R;Wood, D.W.; Setubal, J.C.; K
Y.; Woo, L.; Kitajima, J.P.; O
Sr., D.; Chapman, P.; Clendenn
Guenthner, D.; Kutyavin, T.; L
Raymond, C.; Rouse, G.; Saenph
Paulsen, I.; Karp, P.; Romero,
Science 294, 2317-2323, 2001
A;Authors: Yoo, H.; Tao, Y.; B
Gordon-Kamm, B.; Liao, L.; Kim
S.V.; Tomb, J.; Gordon, M.P.;
A;Title: The Genome of the Nat ; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Wookitajima, J.P.; Okura, V.K.; Almeida Jr., N.F.; Zleman, P.; Clendenning, J.; Deatherage, G.; Gillet, .; Kutyavin, T.; Levy, R.; Li, M.; McClelland, E.; Rouse, G.; Saenphimmachak, C.; Wu, Z.; Gordon, D. Karp, P.; Romero, P.; Zhang, S. .ng
, Wood,
; Zhou,
t, W.; G
Palm'
Eir G.E.; Cher, Y.; Boves; Grant, C. Imieri, A., isen, J.A. Bovee it, C.; .

Y.; Biddle, P.; Jung, Kim, S.; Hendrick, P.; Olson, M.V.; Nes Natural Genetic Eng . P Jung, M.; Frick, C.; Zh.; Nester, Fic Engineer Zhao, , E.W. Krespan, Zhao, Z.; ξ. Do þ Ď, OΩ HX .ngey

Agrobacter 4 fa

> A;Reference number: AB257;
> A;Accession: AD2742
> A;Status: preliminary
> A;Molecule type: DNA
> A;Residues: 1-2155 < KUR>
> A;Cross-references: GB:AE(
> A;Experimental source: state)
> C;Genetics:
> A;Gene: Atu1348
> A;Map position: circular (60 γΩ ΛÕ 70 ΛÕ ΛÕ 밁 50 ΛÕ **YYOYYYYY** 日 멍 밁 밁 8 멍 Ma.)uer)est (atc) C Local he Ma 87 tch 763 660 609 91 37 31 82 27 23 71 18 12 430 69 0 C S 0 φ σ : | VASAET MTF D \mathbf{z} DAALAHNEQI DALVET RANRLY KLAKTVKDMSGEAIS **ALNAGKRMAGLPLDVATDGLKAVRS** EHLAAMLDERAAAINS SAI AFTNSHAKIDTVLAERSNALF TKAAVSQLSNLVGSVGVFAGWTTAGL ANVEE $C \vdash$ | | | ::: ALNAVVSGAEER-GAEE arit LDMS S SVLQYMQPAINK-RIAG-DKLHDAMAVS AFVLGMKDKEP : :| | ERLSETLDNRTS/ RIAEALDS: HDVVSGA Y SVQGAVDF เกิ 8 ct ίτj ~) || || || -ALDSRTDS 4 chromos 00 J н 5. する Ω 400 **μ**· ω H MUID: 99 E **4** N STGASLRSTVNNI RTLALDMTI **23** SVD olo olo щ VKRHSPALGRQV **VVADVERRLTET** OD 50.50 KAALSEET DWI RIADT Œ LDGRT. ď \sim S Score Pred. 1608550; AGGLVAN- \sim H(Dupont) GDWLATPLKPLTPLISGALSGAMDQVGTKMMDRARGDLH | |: |:|| |:: ; | ERRLTETLETRAAAITGAVSGIEDRISDTLESRTAA---Ø IADAL B EGETPATIAETFAKAEKFDRLATTASSAF----ENTP ismatches **69** •• LVSATSLTKNGLALAGGYAGVSKLQKMATKNITDS No. 49.5; DB 2; EERIAEAMDARASSLS TDPAVKKAESFIQDKVKSTASSTTSYVADQTV RHRSAPEADIEEGGIS JDSRTMALDMTFSGAEEKIAEALDTRTAALGEL DAYKAIKSASYSGA--VDMGIAVQTFSALNVVRTVLAPALASR-----2354.1; PMID:11743193 -GALSASQDRFDEALASRSLAITGSVSGTA -GRTAALSSAISGVEERIADTMDSRTLSLD -ALKSAVAGVEDRIAGALDSRTAALSG--176; PID:g17739760; GSPDB:GN00186 ---AGFGDRMLSVQSR--DQLRG Length Indels --VSGAEERIT-DVLDS 473 2155; 127; Gaps 429 874 822 762 716 179 659 910 369 272 124 309 234

16;

62

ହ

1004

RESULT 2
C97523
hypothetical protein (C58, Cereon)
C;Species: Agrobacter
C;Date: 30-Sep-2001 #.
C;Accession: C97523
R;Goodner, B.; Hinkle
Goldman, B.S.; Cao, Y # 17 ĀG E Ż tumef വ N. 490 ac ___ impo Ø Ţ Agrobacterium tumefaciens (strain

equenc Ø revi (a 0 ij O Sep-2001 #text_ _change 18-Nov-2002

κ Φ **~**. G.; Gattung, Askenazi, M. ** (S Hall ing, C.; Mullin, L.; Houmiel, K.;

Gordon, J.; Vaudin, M.; Iartch
M.; Doughty, D.; Scott, C.; La
Gurson, J.; Lomo, C.; Sear, C.
Science 294, 2323-2328, 2001
A;Title: Genome Sequence of th
Agrobacterium tumefaciens C58.
A;Reference number: A97359; MU
A;Accession: C97523
A;Status: preliminary
A;Molecule type: DNA
A;Cross-references: GB:AE00786
C;Genetics:
A;Gene: AGR_C_2490
A;Map position: circular chrom 8 40 40 20 δA S 밁 밁 망 망 2 밁 Ş 몽 문 Query Best I rt (A) ches Ma Ma tch 235 717 660 609 911 875 310 273 430 $\mathbf{\omega}$ 80 25 23 ద్ద 69 62 96 Simil DAALAHNEQIDALVETRANRLYSEG 12) ATKAAVSQLSNLVGSVGVFAGWTTAG VASAETRIAG-ALDSRTDSLKTV ALNAGKRMAGLPLDVATDGLKAVRSLVSATSLTKNGLALAGGYAGVSK RTAALNAVVSGAEE KLAKTVKDMSGEAISSTGASLRSTVNNLRHRSAPEADIEEGGIS RTMALDMS FSGVEEKITDILDGRTA AAASVLQYMQPAINK-: :: ||: | :| |:: : | | :| :|
IVSGAEERIAEALDSRTLALDMTISGVEERIAEAMDARASSLS C ANVEERLS 6.29 larity 20.79 Conservative arity PDKLHDAMAVSVKRHSPALGRQVVDMGIAVQTFSALNVVRTVL GAFVLGMKDKEPKAALSEETDWLDAYKAIKSASYSGA-<KUR>
GB:AE007869; SVQGAVDFGVSTAGGLVAN-LHDVVSGAESRIADTLDchromos :| | |:||: ETLDNRTSALTGIVASAEEKIAGALDSRTATF C58 Lappas, C.; C.; Strub, C the GIDM chouk op op 54.54 Plant 65 .. PIDN: AAK87140 N A S 0 54 0 core 60 GDWLATPLKPLTPLISGALSGAMDQVG Mismatches $\boldsymbol{\omega}$ IADALDSRTMALDMTFS Pathogen S Epp, A.; Li; Markelz, IG.; Cielo, Ė S 149. No. •• LATDPAVKKAE PAT PMI 0 IAETF -GALSASQDRFDEALASRSLAITGSVSGTA ALKSAVAGVEDRI AGALDSRTAALSG-35 and Eiu, B.; DВ C B AKAEKFDRLATTAS 17 שי J Biotechnolo ID: SFIQDKVKSTAS: ::|:: Φ N 4 F.; "-Flanagan, ; Slater, ũ ו 9 GAEEKIAE AGFGDRMLSVQSRg1515640 Length Indels **GDVVAGAETRIAE** 100 **DSA** ω 2155 APALASR-DTLESRTAA-TKMMDRARGDLH AEERIT-DVLDS LOWATKNITDS ALDTRTAALGE SSTTSYVADQTV ဂ SAF 127; 54 Agent GSPDB:GN00169 50 Crowell. -DQLRG Allinge Gaps TLDG 罗马 F_D J 179 659 910 874 822 762 309 272 716 196 429 369 234 24 16; OH 50

RESULT AE3045 ice nuc C58, D ωö nucleati
, Dupont c) chop ם 0 log [impo ted] ð tum Ø, O

C; Species: Agrobacterium tumefaciens
C; Date: 11-Jan-2002 #sequence_revision 11-Jan
C; Accession: AE3045
R; Wood, D.W.; Setubal, J.C.; Kaul, R.; Monks, Y.; Woo, L.; Kitajima, J.P.; Okura, V.K.; Alr
Sr., D.; Chapman, P.; Clendenning, J.; Deaths
Guenthner, D.; Kutyavin, T.; Levy, R.; Li, M
Raymond, C.; Rouse, G.; Saenphimmachak, C.; V
Paulsen, I.; Karp, P.; Romero, P.; Zhang, S.
Science 294, 2317-2323, 2001
A; Authors: Yoo, H.; Tao, Y.; Biddle, P.; Jung
Gordon-Kamm, B.; Liao, L.; Kim, S.; Hendrick, S.V.; Tomb, J.; Gordon, M.P.; Olson, M.V.; Nu
A; Title: The Genome of the Natural Genetic EI
C58. A;Accession:
A;Status: pre
A;Molecule ty
A;Resid A; Molecule type: DN
A; Residues: 1-989 <
A; Cross-references:
A; Experimental sour δδ 50 8 멍 S 40 뭉 8 용 몽 망 日 ;Gene: ;Genetics: Query I Best Lo Matcher erence number: AB ession: AE3045 tus: preliminary Loca Match CO 271 117 376 177 158 436 314 324 216 218 127; (:noi: 63 86 ELALFS SSAF :|| || |: |: | | AGLSTDNAAALTKSQIAAMSSTQFNALT RG IAALSKAQVSALSTTQFAAMSTDQ-GSPDERDAALAHNEQI DALVETRANRLY **AQQPPGVAMESFRTASDASLASSSVRSV** DLHYLSTSPDKLHDAMAVSVKRHSPALGRQVVDMGIA-nces: GB. linear DNA 1a Conse <KUR> ENTPFAAASVIQYMQPAINKGDWLATPLKPLTPLISGALSGAMDQVGTKMMDRARG GAFVLGMKDKEPKAALSEE rity TDEIKAIGANAVA-AB2577; rvat AE St chromos -PLDVAT DGLKAVRSLVSATSLT KNGLALAGGY AGVSKLQKMATKNITDSA 00 6.2 22.4 tive 11n MUID: 21608550; S B G 9 op op 31.34 α ď (Dupont) Score Pred. GLSAAALA Mismatches ; Monks, D.; Chen, L.; Wood, G.E.; Chen, K.; Almeida Jr., N.F.; Zhou, Y.; Bovee; Deatherage, G.; Gillet, W.; Grant, C.; Li, M.; McClelland, E.; Palmieri, A.; k, C.; Wu, Z.; Gordon, D.; Eisen, J.A.; No. 14 ck, TDWLDAYKAIKSASYSGAALNA---9 ung, M.; Krespan, ck, C.; Zhao, Z.; Nester, E.W. Engineer Agrobact Jan-2002 #text_change 18-Nov-2002 **ALTT DNAAALTKTQ I AGLS STQLNALTS ANLA** | : | : | : | : | : | : | SGSLATFSADEVKAISNKILAGLDVTKLSTGN SEGETPATIAETFAKAEKF-----STTSCRDLQAI-TDYLKH---HVFAAHRFSVI 4779.1; PMID:11743193 ; DB . -IKALTSDQVAGLSSA--QVATLSSD-2; 228; PID: g17742417; Agrobacterium Length 989; Indels -LDVTKLSTGNVA-AL W.; Per Dolan, 136; Perry, M.; an, M.; Tingey, GSPDB:GN00187 tumefaciens -DRLATTA Ş ່ດ.; 370 487 270 215 176 217 116 157 435 313 375 264 62 25;

Qy Qy	371 TKAAVSQLSNLVGSVGVFAGWTTAGLATDPAVKKAESFIQDKVKS 415 :	
Qy	T-VKDMSGEAISSTGASLRSTVNN	
Db	: :: :	
ОУ	465ADIEEGGISAFSRSE 479 : : :::: 597 KAITTKALGGLDVTKLSTGNIAALTKAQ 624	
RESULT 4 G98240 hypothetical hypothetical C58, Cereon) C;Species: A	<pre>protein AGR_L_1758 (imported) - Agrok grobacterium tumefaciens ct-2001 #sequence revision 22-Oct-2001</pre>	
;Acce;Good	G98240 ; Hinkle, G.; Gattung, S.; Miller, N.; Blanchard, P.; Cao, Y.; Askenazi, M.; Halling, C.; Mullin, L.; P. audin, M.; Iartchouk, O.; Epp, A.; Liu, F.; Wollam, D.; Scott, C.; Lappas, C.; Markelz, B.; Flanagan, Como, C.; Sear, C.; Strub, G.; Cielo, C.; Slater, S.	
A;Title: (me Seque	
A;Reference A;Accession: A;Status: pr	0 0	
A;Residues: A;Cross-ref C;Genetics: A;Gene: AGR A;Map posit	1-100 erence	
Query Match Best Local Matches 12	6.2%; Score 149; DB 2; Length 1009; Local Similarity 22.4%; Pred. No. 0.13; es 127; Conservative 77; Mismatches 228; Indels 136; Gaps 25;	
P Qy	7 AQQPPGVAMESFRTASDASLASSSVRSVSTTSCRDLQAI-TDYLKHHVFAAHRFSVI 62 † :: : : : : : : : : : : : :	
Ov		
DB Qy	DRLATTA : : LDVTKLSTGN	
Dy Qy	117 SSAFENTPFAAASVLQYMQPAINKGDWLATPLKPLTPLISGALSGAMDQVGTKMMDRARG 176 	
Qy	177 DLHYLSTSPDKLHDAMAVSVKRHSPALGRQVVDMGIA	

Qy 49 LKHHVFAAHRFSVIGSPDERDAALAHNEQIDALVETRANRLYSEGETPA 97 : ; : ; ; ; ; ;
Db 726 INEISQRPDLTREEKQAFMDQVRTARDAAMAKVASAANNQAVTSARDQGLNAVNNLPTPA 785
Qy 3 INQSAQQPPGVAMESFRTASDASLASSSVRSVSTTSCRDLQAITDY 48
Query Match 6.0%; Score 143.5; DB 2; Length 2055; Best Local Similarity 22.2%; Pred. No. 0.78; Matches 123; Conservative 78; Mismatches 249; Indels 105; Gaps 23;
A;Molecule type: DNA A;Residues: 1-2055 <man> A;Cross-references: EMBL:AF067776; NID:q3249002; PID:q3249003; PIDN:AAD03320.1</man>
n: 1311 prelimi
Refere
Infect. Immun. 67, 50-56, 1999 A;Title: Cloning and characterization of emb, a gene encoding the major adhesin
Manganelli, R.; v
C;Date: 02-Sep-2000
lar matri
Db 617 KAITTKALGGLDVTKLSTGNIAALTKAQ 644
Ov 465ADIEEGGISAFSRSE 479
Db 563 IGANAVAGLSAAALAALTTDNASALTKTQIAGMSSTQINALTSANLATFSADEI 616
SSTTSYVADQTVKLA
Db 508 SKAQVSALSTTQFAAMSTDQIKALTSEQVAGLSSAQVATLSSDELALFSTDEIKA 562
Qy 371 TKAAVSQLSNLVGSVGVFAGWTTAGLATDPAVKKAESFIQDKVKS 415
Db 456 KTQIAGLSSTQLNALTSGSIATFSADEVKAISTKALAGLDVTKLSTGNVA-AL 507
Qy 314 GKRMAGLPLDVATDGLKAVRSLVSATSLTKNGLALAGGYAGVSKLQKMATKNITDSA 370
Db 396 KALTSEQVAGLSSAQVATLSSDELALFSTDEISAFSANAVAGLSTAALAALTTGNATALT 455
Qy 271 RGGAFVLGMKDKEPKAALSEETDWLDAYKAIKSASYSGAALNA 313
Db 344 TFSA-DEIKAISTKALAGLDVTKLSTGNIAALTKTQAASLSSTQFAAMSTDQI 395
Qy 216 TFSALNVVRTVLAPALASRPSVQGAVDFGVSTAGGLVANAGFGDRMLSVQSRDQL 270
Che winneithneis (ceronia co)

Qy	98 TIAETFAKAEKFDRLATTASSAFENTPFAAASVLQYMQPAINKGDWLA 145
Db e	843 TLAKADSDGVKAINDINPQPRSKPAANQALEQVAAAKRQAINNNNQLTDEEKA 895
Qy 1	146 TPLKPLTPLISGALSGAMDQVGTKMMDRARGDLHYLSTSPDKLHDAMAVSVKRHSPA 202
Db	896 QAIQQVDQALANAKTQVQAANDNNGVNQAKTA-GTTAINNINPQGTQKAQAIAAIEAAEQ 954
Qy	203 LGRQVVDMGIAVQTFSALNVVRTVLAPALASRPSVQGAVDFGVSTAGGLVA 253
2 dQ	955 AKRLELQGRNDLTTEERNNALADLTAKAQAAKDAVNQARNNTGVAGAKDNGVAQIQGINP 1014
Qy	254 NAGFGDRMLSVQSRDQLRGGAFVLGMKDKEPKAALSEETDWL-DAYKA 300
טט מס	1015 TAVVKPDARNAIDQAARDKEAEFQANTKLTDEEKAAAIKKVQDAARDAKAA 1065
Qy	301 IKSASYSGAALNAGKRMAGLPLDVATDGLKAV-RSLVSATSLTKNGLA 347
Db 10	1066 IDRAGSNGDVNNAVNQGKAAIQAIKALDDSQPSAKDTAKAAIQNAADAKKAA 1117
ОУ	348 LAGGYAGVSKLQKMATKNITDSATKA-AVSQLSNLVGSVGVFAGWTTAGLATDPAVKKAE 406
Db 11	1118 ITANNALTQEEKAAAIKQVEDEAAKAQAAVDASRSKADVDRAKDQGLQKISDVPAVQPPK 1177
Qy 4	407 SFIQDKVKSTASSTTSYVADQTVKLAKTVKDMSGEAISSTGASLRSTVNNLRHRSAPEAD 466
Db 11	1178 LNAIAAVDQAATDKKAVINNDTT-LTQEEKEAAIRKVDEEAAKARQAINDATSNADVAAK 1236
Qy 4	467 IEEGGISAFSRSETP 481
Db 12	1237 QAQGTQAINNVPQTP 1251
RESULT 6	
Htrl7 trans C;Species:	Htrl7 transducer [imported] - Halobacterium sp. NRC-1 C;Species: Halobacterium sp. NRC-1 C:Dato: 03-Eok-2001 #somerca revision 03-Eok-2001 #tout okango 16-Eok-2001
C;Accession R;Ng, W.V.;	B.; Pan, M.; Shukla,
Hall, J.; D	ell, :
Angevine, C	.M.; Dale, H.; Isenbarger, T.A.; Peck, R.F.; Pohlschrod, M.; Spudich, K.H.; Alam, M.; Freitas, T.
Proc. Natl.	
T.M.; Liang), P.; Riley, M.; Hood, L.; DasSarma, S.
A;Reference	number: A84160; MUID:20504483; PMID:11016950
A;Status: p	preliminary
A; Residues:	
A;Cross-ref	ferences: GB:AE004437; NID:g10581193; PIDN:AAG19968.1; GSPDB:GN00138

C >;;Gene: htr17 family .. Halob acter um t sal inarum t T ansducer protein htrI

δÃ QΥ δÃ Qγ δõ 20 δĀ QΥ ΛÕ 멍 멍 밁 밁 멍 Query Best 1 Matches Local tch 176 419 398 362 258 132 303 291 231 215 Δ 348 _ 119 119 47 72 63 12 4 AASVSAAAimi MTDIQS GPVMDAFST-**GVAMESFRTAS** FAVVAAEVKELAE-QYMQPAINKGDWLATPLKPLTPLI-LAHNEQIDALVETRANRLYSEGETPATIAETFAKAEKFDRLATTASSAFENTPFAAASVL GASLRS LAGGYAGVSKLQKMATKNITD TDELQSLSGAVE-EVAASASQVAD RRADEQRAQAQEAKAEAQDARE: — ↔ DWLDAYKAIKS-ASYSGAALNAGKRMAGLPLDVATD--GLKAVRSLVSATSLTKNGLA | ;|: | ;|: | ;|: | | ;|; |DIQSETEAVVSEANALAAEAQEIRRVVDLINDI-TDQTHLLALNASIEAARADQDGDG C ar onserv SVQGAVDFGVSTAGGLVANAGFGDRMLSVQSRDQLRGGAFVLGMKDKEPKAALSE TVNNLRHRSAPEADIEEGGISAFSRSET
: :: | :: | | :: |
AA---QQQTASLSDVTDGVTRLVDRADT Q ct DHVTD--VNEAVQQI DDAT GD àt DASLASS 5.9%, 23.2%; TDPAVKKAESFIQDKVKSTASSTTSYVADQTVKLAKTVKDMSGEAISST ETNEAT DE 80.86 78; SVRSVSTTSCRDLQAITDYLKHHVFAAHRFSVIGSPDERDAA -LTVRANSS Sc ore ore 141; DB ed. No. 0.17 Mismatches SGALSGAMDQVG---: |:| DAQAAS--: | || :|| |SDSDAMTEVGQAFNEMIAAFEEMVARTREFAGD 1; DB 2; Length 536; 0.17; --VSDQAADRGRQGS-----ADTTVSMIEEIEDIS-EQNSSE 480 197; 501 Indels -TKMMDRAR----120; --DDAAAAVTQ Gaps 470 418 131 361 257 113 446 397 347 302 230 214 175 171

77 (import

(A)

0-May-2001

#text

_change

22-Oct-2001

rt

èd.

Staphylococcus aureus (strain N315)

RESULT 7
H89960
hypothetical protein SA1577 [in C; Species: Staphylococcus aureu C; Date: 10-May-2001 #sequence of C; Accession: H89960
R; Kuroda, M.; Ohta, T.; Uchiyan L.; Oguchi, A.; Aoki, K.; Nagai H.; Maruyama, A.; Murakami, H.; Sawano, T.; Inoue, R.; Kaito, Cs.; Shiba, T.; Hattori, M.; Ogari, Shiba, Shiba, T.; Hattori, M.; Ogari, Shiba, Shiba vano, T.; Inoue, K.; Narco; Yabuzaki, J.; Kanehisa, I; Shiba, T.; Hattori, M.; Nacet 357, 1225-1240, 2001 Uchiyama Nagai, i, H.; M.; Y. Hosoyama, .; Sekimizu Yamashita, Baba, Lian, uma,) T.; Yuzawa, H.; Kobayashi, I.; Cui, J.; Ito, T.; Kanamori, M.; Matsumaru, .; Mizutani-Ui, Y.; Kobayashi, N.; K.; Hirakawa, H.; Kuhara, S.; Goto, A.; Oshima, K.; Furuya, K.; Yoshino, Hayashi, H.; Hiramatsu, K.

A;Title: Whole genome sequencing of A;Reference number: A89758; MUID:213 A;Accession: H89960 A;Status: preliminary A;Molecule type: DNA A;Residues: 1-2186 < KUR> A;Cross-references: GB:BA000018; PID A;Experimental source: strain N315 C;Genetics: A;Gene: SA1577 A;Title: Whole genome s A;Reference number: A89 A;Accession: H89960 A;Status: preliminary A:Molecule type: DNA equencing of meticillin-resistant 758; MUID:21311952; PMID:11418146 S

ID: g13701552;

PIDN: BAB42845

Query Best I Matches 5.8%; Local Similarity 19.3%; nes 105; Conservative 94; Pred. Score 140.5; ed. No. 1.3; Mismatches 1.3; Ba 203; ? Length Indels N 186

8 밁 Ş 밁 S 밁 γ 뮍 Ş Ş δõ 뮍 ₽ 8 1076 1135 024 973 250 319 192 276 241 196 136 930 76 20 TAANTNILNANTNADVEQVKTNAIQGIQAITPATK-NAEVDQAATVAENNI DAVQVDVVKKQAARDKI T-QAKDQGTQNIVVIQPATQVKTDARNA-PAINKGDWLATPLKPLTPLISGALSGAMDQVGTKMMDRARGDLHYLST EQIDALVETRANRLYSEGET PAT I AETF AKAEKF DRLATT AS SAFENT TASDASL--PNIVKKPAALAQINQHYNAKLAEINATPDATNDEKNAAIN--TLNQDRQQAI VKRHSPALGRQVVDMGIAVQTFSALNVVRT-GLPLD-KQEINQNTNATTEEKQVALNQVDQELATA---INNINQADTNAEVDQAQQLGTKAINA -IDKSAETQHNTIFNNND--ATLEEQQAAQQLLDQAVATAKQNIN---VATDGLKAVRS LVSAT SLT KNGLALAGGYAGVS KLQKMA VLGMKDKEPKAALSEET DWLDAYKAI KSASYSGAALNAGKRMA -ASSSVRSVSTTSCRDLQAITDYLKHHVFAAHRFSVIG -VDFGVSTAGGLVANAGFGDRMLSVQSRDQLRGGAF -VNDKAREAITNINA -VLAPALASRPS -AEVAKRIEAVKQTP TPGATRE /KTDAKNA-VQGA ATGVLNDLATAK SPDERDAALAHN PDKLHDAMAVS FAAASVLQYMQ TKNI TDSAT **AADTNQEVA** EKQE O 107 119 113 135 75 318 95 မ 40 O 24 2

굞 SULT $\mathbf{\omega}$

S

428

TVK-

LAKTVKDMSGEAISSTGASLRSTVNNLRHRSAPEADIE

EGG

RSETP

멍

W

49

VIKPKAIADIEKAVKEKQQQIDN-

LDST DNEKEVASQALAKE

ΛÕ

482

FQLRR

486

405

ONVOS

1409

δÃ

373

AAVSQLSNLVGSVGVFAGWTTAGLATDPAVKKA-ESFIQDKVKSTASS

TTSYV

427

AIDNVEAEV

- KDQAINQINQNQTNDQVDTTTNQ

밁

305

AAVNQINQL-

A;Reference number: Z17583
A;Reference number: Z17583
A;Accession: T12796
A;Status: translated from GB
A;Molecule type: DNA
A;Residues: 1-2285 <LAZ>
A;Cross-references: EMBL:AFC
R;Kunst, F.; Ogasawara, N.;
V.; Bertero, M.G.; Bessieres
Boursier, L.; Brans, A.; Bra
Bruschi, C.V.; Caldwell, B.;
J.J.; Connerton, I.F.; Cummi
Duesterhoeft, A.; Ehrlich, S.
Fabret, C.; Ferrari, E.
Nature 390, 249-256, 1997
A;Authors: Foulger, D.; Frit
A.; Galleron, N.; Ghim, S.Y.
G.; Guiseppi, G.; Guy, B.J.;
Hilbert, H.; Holsappel, S.;
Giseppi, G.; Guy, B.J.;
Hilbert, H.; Holsappel, S.;
Joris, B.; Karamata, D.; Kas
Kobayashi, Y.; Koetter, P.;
Lapidus, A.; Lardinois, S.
A;Authors: Lauber, J.; Lazar
S.; Maueel, C.; Medigue, C.;
Nakai, S.; Noback, M.; Noone
B.; Park, S.H.; Parro, V.; F
A.M.; Presecan, E.; Pujic, F
S.; Rieger, M.; Rivolta, C.;
T.; Scanlon, E.
A;Authors: Schleich, S.; Sch
A.; Seror, S.J.; Serror, P.;
Takagi, T.; Takahashi, H.; T
T.; Terpstra, P.; Tognoni, P
Weitzeneger, T.; Winters, F
Weitzeneger, T.; Winters, F Weitzenegger, 7 K.; Yata, K.; N A; Authors: Yosh A; Title: The co A; Reference A; Accession A; Status: n A; Status: n A; Molecule A; Residues: A; Cross-ref PID:e118358 A; Experimen C; Genetics: .M.; FL.

Rieger, M.,

Scanlon, E.

A; Authors: Schleich, S.; Schleich, S.; Schleich, S.; Schleich, S.; Schleich, S.; Schleich, S.; Schleich, Serror, P.

Takagi, T.; Takahashi, H.;

Takahashi, H.; probable trar C;Species: Ba C;Date: 13-Au C;Accession: R;Lazarevic,); Desc); Pbeta); Refe Author; Title: iption: 2 proph Ü gger, T.; Winters, , K.; Yoshida, K. s: Yoshikawa, H.F. The complete geno .umber:
.n: T12796
: translated
e type: DNA
s: 1-2285 <'
eference' prophage 3 6 5 6 W nuc rans ferences: 32; PID:c 2 number: A6991 nsglycosylase - Ba acillus subtilis p ug-1999 #sequence_ T12796; A69911 V.; Duesterhoeft, A699: **N** 0 œ DNA 85 <): g2 ac <u>.</u> .. O omple pt A6 EMBL: AF ் கை இ from G Dat genom e, C.; Medina,
Noone, D.; O'F
V.; Pohl, T.M.
jic, P.; Purnel
a, C.; Rocha, E ٠٠٠ ڪي Φ Cumm O 10 <u>5</u>8 Jaser,
ilaser,
; Haga, K.,
S.; Hosono, S.; Kasahara, Y.;
P.; Koningste;
S.
azarev; Ċ ÇΥ equenc **m** C Schrop.; Tal 5 91 Br 0 Ū. D) Φ 54 raun, M.; Brig .; Capuano, V. mings, N.J.; D S.D.; Emmerso Takemar 02071 Mosz A.; P.; B/EMBL/ Φ Ba nuc ָרָל 5 roeter, Shin, E phage e revi: sequence • cillus bhage SI revisio Φ Wambut e le \rightarrow 9r 9r 0 Ö K • nel E NID:g302547, I.; Albert Bolotin, A.; Brignell, Во DDB **L** æ a B.S. Augus Soldo, († Rei Rei E.; ID:g3025478; PID:g3025510; PIDN:AAC13005.1
I.; Albertini, A.M.; Alloni, G.; Azevedo, lotin, A.; Borchert, S.; Boriss, R.; Brignell, S.C.; Bron, S.; Brouillet, S.; V.; Carter, N.M.; Choi, S.K.; Codani, V.; Daniel, R.A.; Denizot, F.; Devine, K.M.; erson, P.T.; Entian, K.D.; Errington, J.; 20 O 🔨 ВС 5. rt 🤏 4 Lee ita, M.; Fujita, Y.; Fuma, S.; Galizzi,
P.; Goffeau, A.; Golightly, E.J.; Grandi,
Haiech, J.; Harwood, C.R.; Henaut, A.;
; Hullo, M.F.; Itaya, M.; Jones, L.;
Klaerr-Blanchard, M.; Klein, C.;
n, G.; Krogh, S.; Kumano, M.; Kurita, K.; · • • 0 O E Jee, S.M.; Levine, A.; Liu, H.; Masuda, J.; Mellado, R.P.; Mizuno, M.; Moestl, D.; Ily, M.; Ogawa, K.; Ogiwara, A.; Oudega, Portetelle, D.; Porwolik, S.; Prescott, B.; Rapoport, G.; Rey, M.; Reynolds, Roche, B.; Rose, M.; Sadaie, Y.; Sato, < ·· ·· H N PH + μ N equence of the Bacillus subtilis ct (J) Scoffone, F.; Sekiguchi, J.; Sekowska, Soldo, B.; Sorokin, A.; Tacconi, E.; Takeuchi, M.; Tamakoshi, A.; Tanaka, .; Uchiyama, S.; Vandenbol, M.; Vannier, R.; Wedler, E.; Wedler, H.; Yamamoto, H.; Yamamoto, H.; Scoffone, F Soldo, B.; Takeuchi, the 115 Yoshikawa, H.; Danchin, A. he Gram-positive bacterium Bacillus B.; Hilbert, H.; Mauel, C.; Karamata, Aug-1999 #text_change 1997 PMID:9384377 translation not shown NID:g2634478; phage SPBc2 PIDN: CAB14053.1; 15-Oct-1999 Masuda, ←1, D.;

A:Gene: vomI

Query Ma Best Loc Best Loc Matches Db	Match 5.8%; Score 140; DB 2; Length 2285; Local Similarity 20.5%; Pred. No. 1.5; Local Similarit
Оy	EKFDRLATTASSAFENTPFAAASVLQYMQPAINKGDWLATPLKPLTPLISGALSGAMDQV:
Qу	167 GTKMMDRARGDLHYLS-TSPDKLHDAMAVSVKRHSPALGRQVVDMGIAVQTF 217 : ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;
D Qy	218 SALNVVRTVLAPALASRPSVQGAVDFGVSTAGGLVANAGFGDRMLS 263 : : : : : : : : :
Db Qy	264 VQSRDQLRGGAFVLGMKDKEPKAALSEETDWL-DAYKAIKSASYSG 308 ::: : : : : : : 539 IKALEQIGISVKTAGGEAKSASDLISEVAGKWDTLSDAQKQNTSIGVAGIYQLSRFNAMM 598
Qy	309AALNAGK 315
Dъ	599 NNFSIAQNAAKTAANSTGSAWSEQQKYADSLQARVNKLQNNFTEFAIAASDAFISDGLIE 658
DB QY	316RMAGLPLDVATDGLKAVRSLVSATSLTKNGLALAGG-YAGVSKLQKMA 362 : :: :: :
Db Qy	363 TKNITDSATKAAVSQLSNLVGSVGVFAGWTTAGLATDPA-VKKA 405 † : : : : : ! 719 TAGLEAGMTRAAVASRVLKTALRGLLVSTLVGGAFAALGWALESLISSFAEAKKAKDDFE 778
DP QA	406ESFIQDKVKSTASSTTSYVADQTVKLAKTVK 436 : : :
ду V	437DMSGEAISSTGASLRSTVNNLR 458 : : 839 GYDSQGNAILKTNKELEKAIENTK 862
RESULT 9 G64887 probable tai C;Species: E C;Date: 12-S C;Accession:	tail fiber protein GP37 - Escherichia coli (strain K-12) : Escherichia coli 2-Sep-1997 #sequence_revision 17-Sep-1997 #text_change 01-Mar-2002 on: G64887; T09189

```
A;Status......

A;Molecule type: DNA
A;Residues: 1-1122 <BLAT>
A;Residues: 1-1122 <BLAT>
A;Cross-references: GB:AE000234; GB:U00096; N
PID:g1787636; UWGP:b1372
A;Experimental source: strain K-12, substrain
R;Aiba, H.; Baba, T.; Fujita, K.; Hayashi, K.
Kasai, H.; Kashimoto, K.; Kimura, S.; Kitakaw
Miki, T.; Mizobuchi, K.; Mori, H.; Mori, T.;
Y.; Nashimoto, H.; Nishio, Y.; Oshima, T.; Sa
Sivasundaram, S.; Tagami, H.; Takeda, J.; Tak
Yamamoto, Y.; Horiuchi, T.
DNA Res. 3, 363-377, 1996
A;Title: A 570-kb DNA sequence of the Escheri
to the 28.0-40.1 min region on the linkage man and the control of the secheri
to the 28.0-40.1 min region on the linkage man and linkage man and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Molecule type: DNA
A;Residues: 3-1122 <AIB>
A;Cross-references: GB:AE
PID:g1787636; UWGP:b1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Reference number: 2160
A;Accession: T09189
A;Status: preliminary; 1
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R;Blattner, F.R.; Plunkett III, G.; Bloch, Riley, M.; Collado-Vides, J.; Glasner, J.D. J.; Davis, N.W.; Kirkpatrick, H.A.; Goeden Science 277, 1453-1462, 1997
A;Title: The complete genome sequence of E: A;Reference number: A64720; MUID:97426617; A;Accession: G64887
                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                   ΛÕ
                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                             몽
                                                                                                                                                                                                                                                                                                                                                                                                               뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뮍
                                                                                                      망
                                                                                                                                                                                                         뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Accession:
A;Status: nuc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match
Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            on: G6488
nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5.7% al Similarity 21.1% 106; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                               149
   367
                                                    286
                                                                                                      314
                                                                                                                                                       226
                                                                                                                                                                                                         254
                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                             206
                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  112
AKASETS-
                                                                                                                                                                                                        NASS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AKTSETNASASLQS
                                                                                                                                                     VLAPALASRPSVQGAVDFGVSTAGGLVANAGFGDRMLSVQSRDQLRGGAFVLGMKDKEPK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                GSPDERDAALAHNEQI DALVETRANRLY
                                                  AALSEETDWLDAYKAIKSASYSGAALNAGKRMAGLPLDVATDGLKAVRSLVSATSLTKNG
                                                                                                    | || : : : |:| || || || || :|
AGQASASATAAGKSAESAASSASTATTKAGEATEQASAAARS---
                                                                                                                                                                                                                                                                                                                                                             ENT PFAAASVLQYMQPAINKGDWLATPLKPLTPLISGALSGAMDQVGT KMMDRARGDLH
                                                                                                                                                                                                                                                                                                                                                                                                             -DAADSARAASTSAGQAASSAQSASSSAGTASTKATEASKSAAAAESSKSAAATSAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  strain K-12, substrain MG1655
Fujita, K.; Hayashi, K.; Inada, T.; Isono, K.; Itoh, T.; K.; Kimura, S.; Kitakawa, M.; Kitagawa, M.; Makino, K.; K.; Mori, H.; Mori, T.; Motomura, K.; Nakade, S.; Nakamura, Shio, Y.; Oshima, T.; Saito, N.; Sampei, G.; Seki, Y.; ami, H.; Takeda, J.; Takemoto, K.; Takeuchi, Y.; Wada, C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3:AE00023;
372
                                                                                                                                                                                                         AAS
 -AESSKTAAASSASSAASS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            translated
                                                                                                                                                                                                     SATAAGNSAKAAKT SETNARSSET AAGQSASAAAGSKT AAASSASAAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             op op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               **
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            54.54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B:U00096; NID:g1787633;
                                                                                                                                                                                                                                                        KLHDAMAVSVKRHSPALGRQV-VDMGIAVQTFSALNVVRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mi sma
                                                                                                                                                                                                                                                                                                         AATSASTATTKASEAATSARDAAASK--EAAKSSET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              œ/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            138
No.
38; DB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               scherichia coli K-12.
PMID:9278503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEG--ETPATIA-ETFAKAEKFDRLATTASSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                erichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           map.
PMID:9097039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 translation not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C.A.; Perna, N.T.; Burland, Rode, C.K.; Mayhew, G.F.; M.A.; Rose, D.J.; Mau, B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NID:g1787633;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   221;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                coli K-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1122;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIDN: AAC74454.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIDN: AAC74454.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           genome corresponding
                                                                                                    -ASAAKTSETN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             V.;
Gregor,
Shao, Y.
                                                                                                                                                       285
                                                    345
                                                                                                                                                                                                                                                                                                                                                                179
                                                                                                                                                                                                                                                          225
                                                                                                      366
                                                                                                                                                                                                         313
                                                                                                                                                                                                                                                                                                           253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                119
                                                                                                                                                                                                                                                                                                                                                                                                               205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17;
```

NTPFAAASVLQYMQPAINKGDWLAT-PLKPLTPLISGALSGA 162	Qy 105 -KAEKFDRLATTASSAFENTPFAAASVLQYMQI
VIGSPDERDAALAHNEQIDALVETRANKLYSEGETPATIAETEA- 104 : ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	Qy 61 VIGSPDERDAALAHNEQIDALVETRANKL : :: : Db 796 INALSTAQIAALT-TAQVEALTSTQVNALTSK
VRSVSTTSCRDLQAITDYLKHHVFAAHRFS : : : : : ; ; ; ; ; ; ; ;	1 MHINQSAQQPPGVAMESFRTASDAS ; ; ; ; ; ; 746 MHIAELGTEDLAKFTTKDIAA
Score Pred. 76; Mi	red. Mi
	Φ
PIDN:AAL44776.1; PID:g17742414; GSPDB:GN00187 8 (Dupont)	;Status: preliminary ;Molecule type: DNA ;Residues: 1-1731 <kur> ;Cross-references: GB:AE008689; ;Experimental source: strain C58 ;Genetics:</kur>
:21608550; PMID:11743193	;Reference number: AB2577; MUID:21608550; Accession: AB3045
dle, P.; Jung, M.; Krespan, W.; Perry, M.; S.; Hendrick, C.; Zhao, Z.; Dolan, M.; Tingey, son, M.V.; Nester, E.W. al Genetic Engineer Agrobacterium tumefaciens	Biddle, P.; Jiim, S.; Hendrid;;; Olson, M.V.; atural Genetic
C.; Wu, 2.; Gordon, D.; Eisen, g, S.	.; Rouse, G.; Saenphimmachak, C. .; Karp, P.; Romero, P.; Zhang, 4, 2317-2323, 2001
R.; Monks, D.; Chen, L.; Wood, G.E.; Che , V.K.; Almeida Jr., N.F.; Zhou, Y.; Bove J.; Deatherage, G.; Gillet, W.; Grant, C R.; Li, M.; McClelland, E.; Palmieri, A.	Wood, D.W.; Setubal, J.C.; Kaul, R.; Mon; Woo, L.; Kitajima, J.P.; Okura, V.K.; ., D.; Chapman, P.; Clendenning, J.; Deaenthner, D.; Kutyavin, T.; Levy, R.; Li,
on 11-Jan-2002 #text_change 18-Nov-2	Species: Agrobacterium tumefaciens Date: 11-Jan-2002 #sequence_revision 11- Accession: AB3045
imported] - Agrobacterium tumefaciens (strain	1
::: SKTD 528	: : ::: 507 NGADIPDKGCFLNNINAVSKTD
SRSE 479	
ESFIQDKVKSTASSTTSYVADQTVKLAKTVKDMSGEAISSTGASLRSTVNNLRHRSAPE- 464 	QY 406 ESFIQDKVKSTASSTTSYVADQTVKLAKTVKDN
-	
LALAGGYAGVSKIOKMATKNITDSATKAAVSOLSNIVGSVGVFAGWTTAGLATDPAVKKA 405	346

-

A;Gene: A;Map p	A;Status: p A;Molecule A;Residues: A;Cross-ref C;Genetics:	A; Reference :	A;Title:	Gurson, J.; I Science 294,	Gordon, M.; Dou	Goldman, B	C; Accession:	C;Species C;Date: 2	hypothetical C58, Cereon)	RESULT	D D	Qy	Db	Qy	Db	γo	DЬ	Qy	Dь	Qy	Db	Qy	Dъ	Qy	DЬ
e: AGR_L_1764 position: linear chromosome	A;Status: preliminary A;Molecule type: DNA A;Residues: 1-1731 <kur> A;Cross-references: GB:AE007870; PIDN:AAK89452.1; PID:g15159316; GSPDB:GN00170 C;Genetics:</kur>	ence number: A97359; MUID:21608551; PMID:11743194 sion: B98241	Genome Sequence of the Planterium tumefactens C58.	omo, C.; Sear, C.; Strub, G.; Ci 2323-2328, 2001	Audin, M.; Tartchouk, D.; Scott, C.; Lappas	B.S.; Cao, Y.; Askenazi, M.; Halling, C.; Mullin, L.; Houmi	B98241	വര	thetical protein AGR_L_1764 (imported) - Agrobacterium tumefaciens (strain Cereon)		1226 A 1226	449 S 449	1166 ALTSAQIAALNSKQIAALSADDLAIFTTAEMAAIGSGAISGLPASTIASLTTAQIAALGA 1225	407 SFIQDKVKSTASSTTSYVADQTVKLAKTVKDMSGEAISSTGA 448	1114 AQISALTSKQVAALEVTDIASLSA-AQIA-AIGAAGVAGLTTDQIAALSISQVE 1165	353 AGVSKLQKMATKNITDSATKAAVSQLSNLVGSVGVFAGWTTAGLATDPAVKKAE 406	1060 IAALSSNAVAGLSRDTVASLTTAQIAALSSAGISGLGTGQIAGLTSEQVNVLTN 1113	303 SASYSGAALNAGKRMAGLPLDVATDGLKAVRSLVSATSLTKNGLALAGGY 352	1007 LSAAGAAGLTTDQIAALSTDQVGAMTSGQIAALSAKQIAALGTDDIATFSTGD 1059	249 GGLVANAGFGDRMLSVQSRDQLRGGAFVLGMKDKEPKAALSEETDWLDAYKAIK 302	947 QIGALSMAGISGLSTGQIAALTGDQLNVLTNTQIAALTSKQVAAFDVSDITALSTGQIAA 1006	209 DMGIAVQTFSALNVVRTVLAPALASRPSVQGAVDFGVSTA 248	907QLAVLSTDDIATFSTRDMAALGSSAIAGLSKDTVASLTTA 946	163 MDQVGTKMMDRARGDLHYLSTSPDKLHDAMAVSVKRHSPALGRQVV 208	

Query Ma Best Loc Matches Loca Mat ب ب Ch -Simi 6; × . lari Cons Φ ct :y eva đ 5. 21. 4 фÞ φO 30.30 Score 138; L Pred. No. 1.4 6; Mismatches \mathbf{o} DB 4; 19 N 34 **~** • Φ ndels Ω đ 7 J 3 15 N * Gaps N ú

Š δõ 50 δÃ 5 20 밁 밁 망 S 50 밁 밁 Š 50 밁 망 몽 밁 166 353 303 0 855 105 Ò 907 449 407 9 47 9 Ō7 49 63 96 61 N --0 4 S) 9 $\boldsymbol{\omega}$ \vdash AGVSKL-LSAET VIGS MHIA AQI DMG O MHINQSAQQPP \triangleright S MDQVGTKMMDRARGDLHYLSTS S **>** · · ហ Н) I GA NALSTAQIAALT-TAQVEALTSTQVNALT SE ASYSGAALNAGKRMAGLPLDVATDGLKAVRSLVSATSLTKNGLALAG SAAGAAGLTTDQIAALSTDQV-LTSAQIAALNSKQIAALSADDLAI AALSSNA ш GLVANAGE 122 IQDKVKSTASSTTSYVADQTVKL SALT (1) KFDRLATTAS PDERDAALAHNEQI DALVETRANRL-5 Q) ASLAT MAG **QKMATKNITDSATKAAVSQLSNLVGSVGVF** [F] KQVAALEVTDIASLS GDRMLSVQSRDQLRGGAFVLGMKDKEPKAALSE ISGLSTGQIAALTGDQLNVLTNTQIAALTSKQVAAF D GQIAALNVRSIAALSTVQIVA-**GVAMESFRTASDASLASSSVRSVSTT** VAGLSRDTVASLTTAQIAALS QLAVLST. SAFENT PFAAASVLQYMQPAINKGDWLAT-LAKE AVQTESALNVVRTVLAPALASRP H H KDIAAIS DKLHDAMAVSVKRHSPALGRQVV-GAMT SGQ-FTT = <u>က</u> DDIATESTRDMAALGSSAIAG ≱ .. <u>ა</u> — **AEMAAIGSGAIS >** ·· Ż. : :| .IAGLS KQI GA. AALS SAGIS IAALSAKQ S TDDI AT AGWTTAGLAT CRDLQAITDY -LTTAQVEAJ GLPASTI GLGTGQIA EAIAS Ţ AKTVK AGLT FST -YSE AALGTDDIATFSTGD SAG \rightarrow G S II: IIII Z. :: |:: || SLTTAQIAALGA 5 |: | | DITALSTGQIAA VQGAVDFGVST LTPLISGALSGA DIAAINSDAIAG TTAQIAALNTQ DMSGEAISSTGA LSKDTVASLTTA ETPATIAETFA-LKHHVF AAHRF TOWLDAYKAIK :: : | [AALSISQVE EQVNVLTN AVKKAE \rightarrow Ø 854 302 100 248 946 208 162 104 795 448 406 111 352 105 906 60 22 16

 $\boldsymbol{\omega}$

RESULT B9083 N

S

rodmr] ted] [4] scherichi ρ col ₽• (st n T ဂ္ဂ 57:H7

e tail fiber protein [in RIMD 0509952]
es: Escherichia coli
18-Jul-2001 #sequence_
sion: B90835 revi 8 on 8 Jul 00 #text _chan Ö ∞ 2001

Makino, ጙ Ohnishi 3 Kurokawa, Ishii

probable tail substrain RIM C; Species: Es C; Date: 18-Ju C; Accession: R; Hayashi, T. Han, C.G.; Oh T.; Takami, HS.; Shiba, T. DNA Res. 8, 1 Ohtsubo, E.; , H.; Honda, T.; Hattori, , 11-22, 2001 Ċ, **---**: Nakayama, K.; T.; Sasakawa, C , M.; Shinagawa, ᅜ Χ; ç Murata, T.; C.; Ogasawara K.; Isl Tanaka, Yasun Z 50 Ò ス ga, Tobe Yokoyama, K.; be, T.; Iida, , T.; Kuhara,

> A;Title: Complete genome sequence of enterol and genomic comparison with a laboratory st. A;Reference number: A99629; MUID:21156231; A;Accession: B90835
> A;Accession: B90835
> A;Status: preliminary
> A;Molecule type: DNA
> A;Residues: 1-971 <HAY>
> A;Cross-references: GB:BA000007; PIDN:BAB35 erohemorrhagic Es strain K-12. 1; PMID:11258796 Escherichia coli 0157:H7

A; Experimental : C; Genetics:
A; Gene: ECs1650 source: <HAY>
: GB:BA0000007; PIDN:BAB35073.1;
rce: strain 0157:H7, substrain PID:g13361114; RIMD 0509952 GSPDB:GN00154

s1650

Query Ma Best Loc Matches 5.6 Local Similarity 22.0 les 116; Conservative ഞ അ 80.80 S J Score Pred. 7; Mis ore 135; DB 2 ed. No. 0.96; Mismatches 2 135; No. 2; 238; Length 971; Indels 116; Gaps 20;

Λõ γQ 60 ΛÕ Š γQ 뮍 日 밁 뮹 뭉 314 254 181 204 144 110 288 228 121 63 Ćυ VEEVARNASAVAQNTAAAKKSASDASTSAREAAT-LSEETDWLDAYKAIKSASYSGAALNAGKRMAGLPLDVATDGLKAVRSLVSATSLTKNGLA GQASASATAAGKSAESAASSAS LSTSPDKLHDAMAV-APALAS RPSVQGAVDFGVSTAGGLVANAGFGDRMLSVQSRDQLRGGAFVLGMKDKEPKAA AKTSETNAAVSQ--QSA-ENTPFAAASVLQYMQPAINKGDWLATPLKPLTPLISGALSGAMDQVGTKMMDRARGDLHY INQSAQQPPGVAMESFRT VS 쟛 ASDASLASSSVRSVSTTSCRDLQAITDYLKHHVFAAHRFSVI TATTKAGEATEQASA-ATSASTATTKASEAASSARDASASKEAAKS-SETSA •• RHSPALGRQVVDMGIAVQTFSAL--NVVRTVL --AASSASAAKTSETNAK 287 347 203 227 180 120 366 313 253 143 62

QΥ 밁 447 478 388 421 SEMLAATPKSVKAAYDLANGKYTAQDAT GASLRSTVNNLR-FAGWTTAGLATDP-AVKKAESFIQDKVKSTASSTTSYVADQTVKLAKTVKDMSGEAISST TSESLAATPKAVKAAYELANGK-HRSAPEADIEEGGI-TAQKGIVQLSSATNSASET -YTAQDATTAQKGIVQLS-NATNST 480

밁

367

ASETS-

-AESSKTAAASSASSAASSASS

--ASASKDEATRQASAAKS--SATTASTKATE

348

LAGGYAGVSKLQ-

KMATKNITD

SATKAAVSQLSNLVGSVGV

387

477

420

446

Ćυ

Ç

23

569

RESULT 13 C85693 probable coli (str (stra membrane rain 0157: pro:H7, otein subst of ra prophage CP-ain EDL933) 933X Z1918 [import 8 Escherichi

C;Species: Escherichia coli
C;Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 14
C;Accession: C85693
R;Perna, N.T.; Plunkett III, G.; Burland, V.; Mau, B.; Glasner, J.
D.J.; Mayhew, G.F.; Evans, P.S.; Gregor, J.; Kirkpatrick, H.A.; Pc
Hackett, J.; Klink, S.; Boutin, A.; Shao, Y.; Miller, L.; Grotbech
N.W.; Lim, A.; Dimalanta, E.; Potamousis, K.; Apodaca, J.; Anantha
Lin, J.; Yen, G.; Schwartz, D.C.; Welch, R.A.; Blattner, F.R.
Nature 409, 529-533, 2001
A;Title: Genome sequence of enterohemorrhagic Escherichia coli O15
A;Reference number: A85480; MUID:21074935; PMID:11206551
A;Accession: C85693
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-973 <STO>
A;Cross-references: GB:AE005174; NID:g12514847; PIDN:AAG56007.1; C
UWGP:Z1918
A;Experimental source: strain O157:H7, substrain EDL933
C;Genetics:
A;Gene: Z1918 δÃ Ş 9 40 40 γQ 8 δÃ 밁 B 뮹 망 δ 밁 멍 Query Ma Best Loc Matches Local Similari nes 116; Cons 369 181 206 121 146 112 388 348 316 256 480 423 N N Ch 63 28 88 W ASETS-VEEVARNASAVAQNTAAAKKSASDASTSAREAAT GSPDERDAALAHNEQI DALVETRANRLYSEG-! |:| † | | AKTSETNAAVSQ--QSA-INQSAQQPPGVAMESFRTASDASLASSSVRSVSTT GQASASATAAGKSAESAASSASTATTKAGEATEQASA APALAS RPSVQGAVDFGVSTAGGLVANAGFGDRMLSVQSRDQLRGGAFVLGMKDKEPKAA ENTPFAAASVLQYMQPAINKGDWLATPLKPLTPLISGALSGAMDQVGTKMMDRARGDLHY FAGWTTAGLAT DP-AVKKAESFIQDKVKSTASSTTSYVADQTVKLAKT LAGGYAGVSKIQ-ASSASSAASSATAAGNSAKAAKTSETNAKSSETAAEQSASAAAGSKTA LSTSPDKLHDAMAV--SVK-LSEETDWLDAY KAIKSASYSGAALNAGKRMAGLPLDVATDGLKAVRSL 5.6%; ilarity 22.0%; Conservative I: || | ||| | | TSESLAATPKAVKAAYELANG -AESSKTAAASSASSAASSASS-31 31 57 Score 135; DE Pred. No. 0.967; Mismatches -KMATKNITD-ATSASTATTKASEAASSARDASAS -asaskdeatrqasaaks-96 80 ETPATIAETFAKAEK 30 SCRDLQAITDYLKHHVFAAHRESVI N 8 38; AQDATTAQKG Length Indels SATKAAVSQLSNLVGSVGV AASS 97 r, J.D.; Rose, ; Posfai, G.; tbeck, E.J.; Davis, antharaman, T.S.; TVKDMSGEAISST : : | :|! GIVQLS-NATNST VQLSSATNS----SATTASTKATE VSATSLTKNGLA KEAAKS-SETSA SSKSAAATSAGA FDRLATTASSAF 3 **ASAAKT SETNAK** 116; O157:H7. 14-Sep-2001 GSPDB:GN00145; Gaps 315 287 255 120 446 368 227 180 347 205 479 387 422 145 62 524 20;

Qy 447	GASLRSTVNNLRHRSAPEADIEEGGISAFSRSET 480	
Db 525	: ::: SEMLAATPKSVKAAYDLANGKYTAQDATTAQKGIVQLSSATNSASET 571	
RESULT 14		
le he		
C; Date: 02-Nov-2001 C; Accession: AC0304	Nov-2001 #sequence_revision 02-Nov-2001 #text_change 02-Nov-2001 1: AC0304	
R;Parkhill, J Prentice, M.B	.; Wren, B.W.; Thomson, N.R.; Titball, R.W.; Holden, M.T.G.; .; Sebaihia, M.; James, K.D.; Churcher, C.; Mungall, K.L.; Baker,	
S.; Basham, D. T.; Cronin, A.	leno-Tarraga, A.M.;	`` #
P.C.F.; Quail,	, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, K.; Barrell, R.G.	
Nature 413, 5; A;Title: Genor	Nature 413, 523-527, 2001 A;Title: Genome sequence of Yersinia pestis, the causative agent of plague. A:Beference number: AB0001: MIID:21470413: PMID:11586360	
A; Accession: AC0304 A; Status: preliminary A; Molecule type: DNA	AC0304 liminary pe: DNA	
A; Kesiques: 1-2333 A; Cross-references: C; Genetics: A; Gene: YPO2490	-2333 < KUK> ences: GB:AL590842; PIDN:CAC91295.1; PID:g15980484; GSPDB:GN00175	S
Query Match Best Local ! Matches 8	h 5.6%; Score 134; DB 2; Length 2535; Similarity 23.0%; Pred. No. 4.2; 84; Conservative 66; Mismatches 168; Indels 48; Gaps 16	တ
Оу 126	126 AAASVLQYMQPAINKGDWLATPLKPLTPLISGALSGAMDQVGTKMMDRARGDLHYLSTSP 185	S
Db 1383	ATSEHIRHLGSEVNVGGALTANVDNLT-AVGANINAATLEVQAQNISLSAAT 143:	ω
Qу 186	DKLHDAMAVSV	S
Db 1434	DSLHVTGESSSKRHTSSVNLYDETLLGSQLNATGDINLQAAQDITLRASAV 148	Ö
Qy 246		ω
Db 1485	QTDGALTLAAG-	4
Qу 304		9
Db 1541	MLSAGSIDVSGKNIAVMGSNVVADQDISLRAQENITVGTAQQSESESHLFEQKKSGLMST 160	0
Оу 350		9
Db 1601	GG-IGVT-VGSSSTK-MTDSGQSISSVGSTVGSVLGNVSMTAGEDLRVQGAEVLA 165	S
Qy 410		æ
Db 1653	GKDINLTGKNVSILAAENQLTQSHTVEQKQSGLTLALSGA-VGSAVNTAVTTAKAASEES 171	}

	253 -	멍
21 PLDVATDGLKAVRSLVSATSLTKNGLALAGGYAGVSKLQKMATKNITDSATKAAV 375	321	δ
93 IGALSRTQFSALSAATVRALSPQTLALTTADHWRAATIAQMSSLSGDQLKALGETRLSSL 252	193	닭
	277	Qγ
SLAQ	141	망
	223	Qγ
92LSQAQTQALQHTQVAALSITALGEMRTTQLAVLSATAFAALSIDQVQSL 140		뮍
MDRARG	171	Qy
49 TAISALTSEQFAAFDVRQVRALTSAQLPRLSAAISFSPKQLAT 91	49	90
TASSAFENTPFAAASVLQYMQPAINKGD	115	Qy
3 VVGSQNTALSSLSPTRIAALSAATLSEAPASEFAKLTAQQVAAISI 48	ω	ర్జు
GSPDERDAALAHNEQIDALVETRANRLYSEGETPATIAETFAK	61	Qy
ch 5.5%; Score 132.5; DB 2; Length 654; 1 Similarity 24.4%; Pred. No. 0.8; 116; Conservative 67; Mismatches 162; Indels 131; Gaps 28;	Query Match Best Local Si Matches 116;	
730	;Genetics: ;Gene: CC2730	≯ 0
type: DNA : 1-654 <sto> ferences: GB:AE005673; NID:g13424321; PIDN:AAK24695.1; GSPDB:GN00148</sto>	Molecule Residues Cross-re	222
reliminary	Accession: Status: pre	PA
ਰਾਫ਼	A; Title: Comple A; Reference num	~ > >
. U.S.A	Proc. Natl. Aca	7 Y G
rmolaeva, M.; White, O.; Salzberg, S.L.; Shapiro,	Vamathev	A-;
Khouri, H.; Shetty, J.; Berry, K.; Utterback, T.; Tran,		င္ပ ဗွ
J.F.; Alley, M.; Ohta, N.; Maddock, J.R.; Potock Stephens, C.; Phadke, N.D.; Ely, B.; Laub, M.T.;	Newton, A.; Ste	Z I
V.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.;	R;Nierman, W.C.	7 (
pr-2001 #se C87587	Date: 20-	
l protein CC2730 [imported] - Caulobacter crescentus Caulobacter crescentus	thetica	Ç, Þ
	ESULT 15	C R E
12 SGRLGA 1717	1712	D
- - - -	1 1	į
69 EGGISA 474	469	Qγ

```
g
Vy
          Qy
345
                     303
          435
                                376
SQLSNLVGSVGVFAGWTTAGLATDPAVKKAESFIQDKVKSTASSTTSYVADQTVKL-AKT 434
```

Search completed: January Job time : 24 secs 6, 2004, 09:46:19

Copyright GenCore (c) 1993 version - 2004 5.1.6 Compugen Ltd.

OM protein protein search, using sw model

Rus 92: January 6 2004, 09:37:23 ; Search (without 1272.334 time 18 Seconds; alignments) Million cell upd upda rt.

'sec

Title: Perfect score: Sequence: US-09-825-414-66 2407 1 MHINQSAQQPPGVAMESFRT. .EEGGISAFSRSETP FQLRRL 487

Scoring table: BLOSUM62 Gapop 10.0

• Gapext 0.5

Searched: 127863 seqs,

47026705

residues

number of hits satisfying chosen parameters: 127863

Minimum Maximum seq length: length:

0 20000000000

Post-processing: Minimum Match Maximum Match Listing first 0% 100% 45 sı

summaries

Database SwissProt 41:+

Pred. No. is the number of score greater than or equal and is derived by analysis n or equal to analysis of t results predicted by chance to have a l to the score of the result being printed, of the total score distribution.

SUMMARIES

16	14				10		8	7	σ	S	4	ω	2		Result	
118.5	11	•	2	120.5	.	N	N		•	N		w	137	w	Score	
	4.9	•		•	•	•	•		•	•		•	•	•	Query Match	æ
880	YÜ	0	0	4	g	4	9	4	$\boldsymbol{\omega}$	Û	Ŋ	0	4	1120	Length [
	نـر ،	-	_	_	_	_	,	-	+-	_	-	_	_	_	DB	
LYTD_BACSU	7F_C	HLYA_SERMA	MSB2_YEAST	YM96_YEAST	HIPR_MOUSE	CH60_BACHD	NCCB_ALCXX	CH60_LACAC	SPCP_RAT	д 868 СНТМП	SLAP_CAUCR	FLJB_SALAE	CH60_LACHE	STFR_ECOLI	ID	
P39848 bacillus su		P15320 serratia ma	P32334 saccharomyc	Q04893 saccharomyc	Q9jky5 mus musculu		Q44585 alcaligenes	Q93g07 lactobacill	Q9qwn8 rattus norv	Q9pjg1 chlamydia m	P35828 caulobacter	P52615 salmonella	O68324 lactobacill	P76072 escherichia	Description	

•	110	110	110	110	110.5	110.5	111	111.5	111.5	111.5	\vdash	112	\vdash	•	112.5	-	•	\rightarrow	115	115.5	115.5	116	116	116	116	116.5	117	117
4.5	4.6	•_	4.6	•_	•	4.6	•	•	4.6	4.6	• .	•	•	•	•	•	4.7	•	4.8	4.8	4.8	4.8	•	•	4.8	4.8	4.9	4.9
	7389		549	4	\vdash	543	Θ		4	544	N	9	439	Φ	0	2541	571	Ĺ	679	1065	401	3591	1577	$\boldsymbol{\sigma}$	763	570	-	583
\vdash	-	-	-ب	-	-	٢		-	-	-	-		_	-	_	_	-	-	ب	-	-	فسو	-	-			-	-
SOK1_YEAST	BPA1_MOUSE	SLA1_BACAN	CH60_COLMA	HTR5_HALN1	ALA1_CANAL	CH60_MYCGE	PRY3_YEAST	MCP2_ECOLI	CH60_ALTHA	CH60_PROAC	AF10_HUMAN	FLIC_SALRU	Y579_CHLTR	N214_HUMAN	FLJB_SALTY	TLN1_HUMAN	FLA1_CAMJE	V120_EBV	GR78_KLULA	SED4_YEAST	YOPB_YERPS	FHAB_BORPE	HLYA_PROMI	HTR2_HALSA	HTR2_HALN1	FLIF_RHOSH	GR78_YEAST	YP65_MYCTU
P40317 saccharomyc	Q91zu6 mus musculu	P49051 bacillus an	Q93gt8 colwellia m	Q48318 halobacteri	013368 candida alb	P47632 mycoplasma	P47033 saccharomyc	P07017 escherichia		Q9k2u4 propionibac	P55197 homo sapien			P35658 homo sapien	salmo		P56963 campylobact	_	P22010 kluyveromyc	P25365 saccharomyc	Q06114 yersinia ps	P12255 bordetella	P16466 proteus mir	P71410 halobacteri	Q9hp81 halobacteri	Q53151 rhodobacter	P16474 saccharomyc	Q50733 mycobacteri

ALI GNMENTS

STER_ECOLI STER_E

```
Ş
                                                                                                                             멍
                                                                                                                                                    50
                                                                                                                                                                                                  60
                                  밁
                                                                                                      50
                                                                                문
                                                                                                                                                                             밁
                                                                                                                                                                                                                         Mat.
Bes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "A 570-kb DNA sequence of to corresponding to the 28.0-4 DNA Res. 3:363-377(1996).
                                                                                                                                                                                                                                                                                   EMBL; AE0002
EMBL; D90774
EMBL; D90775
PIR; G64887;
EcoGene; EG1
InterPro; IF
InterPro; IF
Pfam; PF0333
Pfam; PF0340
Hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Makino K., Makade S., 
                                                                                                                                                                                                                                                                         Hypotheti
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                  use by a modified a entities a or send as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   [2]
SEQUENCE
STRAIN=KI
MEDLINE=S
                                                                                                                                                                                                                          ory Ma
ches
                                                                                                                                                                                                                                                                                                                                                                                                                  ent.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Thi
                                                                                                                                                                                                                                                                                                                                                                                                          1 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kasai H.
                                                                                                                                                                                                                                                                                                                                                                                         etween the Swiss Institute of Bioinformatics and the European Bioinformatics Institute. There are no se by non-profit institutions as long as its condified and this statement is not removed. Usage by titles requires a license agreement (See http://www.send an email to license@isb-sib.ch).

(BL; AE000234.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PQUENCE
                                                                                                                                                                                                                                        Loc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             is SWISS-PROT
tween the Swi
                                                                                                                                                                                                                                                                                              AE000234; AAC74454.1; D90774; BAA14966.1; -. D90775; BAA14975.1; -. G64887; G64887.
Pro; IPR005003; Phage_f: Pro; IPR005068; Phage_f: PF03335; Phage_fiber; PF033406; Phage_fiber_2
                                                         180
                                                                                                       120
                                                                                                                                                                                                                                        Ø
                                                                                                                                                                                                                                                   toh
                                                                                                                                                                                                                            10
                                  52
                                                                                0
                                                                                                                                                     63
                                                                                                                                                                             فسيخ
                                                                                                                              4
                                                                                                                                                                              0
                                                                                                                                                                                                     u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₩
9
                                                                                 4
                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                             Q)
                                  SAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Baba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FROM 12;
                                                         STA
                                                                                 A
K
                                                                                                                                                      GSP
                                                                                                                                                                                                                                     imi
                                                                                                                                                                              VEEVARNA
                                                                                                                                                                                                    INQSAQQPPGVAMESFRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kashimoto
Miki T.,
Nakamura
                                                                                                       ENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seki
                                                                                                                                                                                                                                                                          11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Seki Y., Sivasundaram :
, Takeuchi Y., Wadanam :
                                                                                                                                                                                                                             CH
                                  ℃ ..
                                                         Н
                                                                                                                                                     DERDAALAHNEQI
                                                                                                                              DAADSARAAS
                                                                                                                                                                                                                                                                        5; Phage
protein;
120 AA;
                                                                                                                                                                                                                            arit;
onse
                                                                                ETNAS.
                                  SAS
                                                         S
                                                                                                       PFAAASVLQYMQPAINKGDWLATPLKPLTPLISGALSGAMDQVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            z
                                                          D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           >
                                   Ŋ
                                                                                                                                                                             SAVAQNTAAAKKSAS
                                   24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PubMed=909
                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               K., ni....
Mizobuchi K.,
Y., Nashimoto
SVQGAVDFGVS1
                                 SATAAGNSAKAAKTSETNARSSET.
                                                                                                                                                                                                                             ct
                                                                                                                                                                                                                             ₩ N
                                                                                                                                                                                                                           5
1
Ve
                                                                                                                                                                                                                                                                         Fiber
13779
                                                                                                                             TSAGQAAS
                                                                                                                                                                                                                                      .1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kimura
                                                                                                                                                     DALVETRANRLY SEG-
                                                                                                                                                                                                                                        യ യ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                                       80.80
                                                                                                                                                                                                                                                                                                          fiber
fiber
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97
                                                                                                                                                                                                  AS DAS LASSSVRSVSTT SCRDLQAIT DYLK
                                                                                                                                                                                                                             65
                                                                                                                                                                                                                                                                         WW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7039;
Hayashi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         moto H., Nishing moto H., Iram S., Tagami H., la C., Yamamoto Y., Bescherichia coli
                                                                                                                                                                                                                         Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -
                                                         KLHDAMAV
                                                                                                                              : :
SAQS,
                                                                                                                                                                                                                                                                                    Ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S., Kitakawa
K., Mori H., M
                                                                                                                                                                                                                             3.
                                                                                                                                                                                                                                                                                       Φ
                                                                                                                                                                                                                                                                         in;
542
                                                                                                                                                                                                                                                  Φ
                                                                                                                                                                                                                                                                                                                       N.
                                                                                                                                                                                                                             smatc
                                                                                                                                                                                                                                       No
                                                                                                                                                                                                                                                  1
                                                                                                                                                                                         ••
                                                                                                                                                                                                                                                  38;
                                                                                                                                                                                                                                                                        Repeat; Comple:
E59D71EE795B4 C
                                                                                 S
                                                                                                                               S
                                                                                                                               SAGT.
                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    i H., Mo
                                                         SVKRHSP
                                                                                                                                                                              AREAATHAA
                                                                                                                                                                                                                             he
                                                                                                                                                                                                                                        0
                                                                                 TATTKAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Inada
                                                                                                                               AST
GDRMLSVQSRDQLRG
                                                                                                                                                                                                                             G
                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      coli K-
                                                                                                                                                    ETPATIA-ETFAKAE
                                                                                                                                                                                                                                         J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mor
                                                                                                                                                                                                                                        3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ጁ
                                  AAGQS.
                                                                                                                              X -
                                                       ALGRQV-
                                                                                                                                                                                                                                                  54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ., Takeda J.
                                                                                | :
                                                                                                                                                                                                                            ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   40.
                                                                                                                               F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kitagawa
T., M-
                                                                                                                                                                                                                           54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Oshima
                                                                                                                                                                                                                                                                                                                                                                                                                               /www
                                                                                                                               Ŋ
                                  ASAAAGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12 genome
linkage m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  no
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ö
                                                                                                                                                                                                                            \vdash
                                                                                                                               KSAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             through
                                                                                                                                                                                                                            indels
                                                                                                                                                                                                                                                                         RC6
                                                                                 ARDAAA
                                                         VDMGI A
                                                                                                                                                                                                                                                                                                                                                                                                                                                      nten
                                                                                                                                                                                                                                                  th
                                                                                                                                                                                                                                                                        pr
4,
                                                                                                                                                                                                                                                                                                                                                                                                                               isb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tom
                                                                                                                                                                                                                                                   هسر
هسر
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Φ
            Q
                                   ス
                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                       一
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       map
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TEMBL A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ura
                                                                                                                                                                                                     HHVFAAHRFSVI
           AFVLGMKDKEPK
                                  TAAASSAS
                                                                                                       TKMMDRARGDLH
                                                        /QTFSALNVVRT
                                                                                                                                                                                                                                                                                       eome
                                                                                                                                                                                                                                                                                                                                                                                                                               sib
                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -
                                                                                                                                                                                                                            11
                                                                                                                                                                                                                                                                                                                                                                                                                                                       ٦.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ict
                                                                                                                                                      DRLATTASS
                                                                                                                               KSAAAT
                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ĺ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                           for
                                                                                : |:
EAAKSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a. ㅈ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Itoh
                                                                                                                                                                                                                           ~ •
                                                                                                                                                                                                                                                                                                                                                                                                                               ch/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ફ `
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ons
                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                              n no way
commercial
/announce/
                                  AAS
                                                                                                                               Ş
                                                                                                                               AGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                H
                                   Н
                                                                                 -3
                                                                                                                                                      \rightarrow
                                                                                                       179
                                                                                                                                                      119
                                  311
                                                         225
                                                                                                                              203
                                                                                                                                                                                                     62
                                                                                 51
                                                                                                                                                                             46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ļ.
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                              뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ų
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    몽
                                                                                                                                                                                        CH60_LACHE STANDAJ
068324;
16-OCT-2001 (Rel. 40,
16-OCT-2001 (Rel. 40,
28-FEB-2003 (Rel. 41,
60 kDa chaperonin (Program of the Color of GROEL OR MOPA
Lactobacillus helvetic
Bacteria; Firmicutes;
Lactobacillus.
NCBI_TaxID=1587;
[1]
SEQUENCE FROM N.A.
STRAIN=LH212;
MEDLINE=98439363; Pubi
Broadbent J.R., Oberg
                                    use by non-profit modified and this stentities require
                                                                                                                                                               Broadbent J.R., Obe
"Characterization of
Res. Microbiol. 149
-!- FUNCTION: Preven
                                                                                                                                                                                                                                                                                                                            . 2
LACHE
CH60
OF'
                                                                   between
the Eurc
                             ent
or
                                                                                      This
                              send
   ָם
בו
                                                                 s SWISS-PROT of the Swith European Bio.
                                                                                                 7 subunits ()
SUBCELLULAR
SIMILARITY:
                                                                                                                           proper asse
conditions
SUBUNIT: 01
7 subunits
                                                                                                                                                                                                                                                                                                                                                                                    505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31
                                                                                                                                                                                                                                                                                                                                                                                                                         450
                                                                                                                                                                                                                                                                                                                                                                                                                                           406
                                                                                                                                                                                                                                                                                                                                                                                                                                                              419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     286
   AF03:
P061:
                                                                                                                                                                                                                                                                                                                                                                                                      65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ŋ
                             s requires
an email t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AKASET
                                                                                                                                                                                                                                                                                                                                                                                   --ADIEEGG----ISAFSRSE
||| : | |:::
NGADIPDKGCFLNNINAVSKTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TEAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AALS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LALAGGYAGVSKLQKMATKNITDSATKAAVSQLSNLVGSVGVFAGWTTAGLATDPAVKKA
                                                                                                                                                                                                                                                                                                                                                                                                                         EDIASAVALEDASTTKKGI-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sagqas
   31929; AAC29
139; 1GRL.
                                                                                                                                                                                                                                                                                                                                                                                                                                           SFIQDKVKS
                                                                                                                                                     assembly
                                                                                                                        39363; PubMed=9766226;
.R., Oberg C.J., Wei L.;
zation of the Lactobacillus
iol. 149:247-253(1998).
N: Prevents misfolding and passembly of unfolded polyper
ons (By similarity).
its (By similarity).
                                               PROT entry is copyright.

Biviss Institute of Bive

Bioinformatics Institute

n-profit institutions and this statement is not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     田田
                                                                                                    LOCATION:
Belongs to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ASATAAGKSAESAAS
                                                                                                                                                                                                                                                                                                                                      TANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DWLDAYKAI KSASYSGAALNA
                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -AESSKTAAASSASSAASSA
                                                                                                                                                                                                                                                                                       40,
41,
(Pr
                             license agree
                                                                                                                                                                                                                                                                                      Last
Last
cotein
                                                                                                                                                                                                                                                                      cus
                                                                                                                                                                                                                                                                                                                   Cre
                                                                                                                                                                                                                                                             Lac
                                                                                                         ţ
                                                                  copyright. It
tute of Bioinf
ics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                TSYVADQTVKLAKI
                                                                                                      Cytoplasmic o the chapero
                                                                                                                                                                                                                                                                                                                   at
                                                                                                                                                                                                                                                            tobacillales
                                                                                                                                                                                                                                                                                      sequence
annotati
Cpn60)
                                                                                                                                                                                                                                                                                                                   <u>ed</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SA
                                                  not
                                                                                                                                                                                                                                                                                                                                                                                                                                                             SATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ່ເນ
                               die
                                        emen
                                                                                                                                                                                                                                                                                                                                                                                                      479
                                                                                                                                                                                                                                                                                                                                                                                                                         STON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATT
                                                                                                                                                                                                                                                                                                                                                                                    N
                                                          25
                                                                                                                                                                                                                                                                                      ion
(gr
                                                                                                                                                                                                                                                                                                                                                                                    Φ.
                             o.c
                                                                                                                                                                                                                                                                                     update)
on update)
groEL protein).
                                                                                                                                                                                                                                                                                                                                                                                                                         (C)
                                                moved.
                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SS--ASASKDEATRQASAAKS--SATTASTKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GKRMAGLPLDVATDGLKAVRSLVSATSLTKNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KAGEATEQASAAARS-
                               t is produced through a collaboration formatics and the EMBL outstation -
. There are no restrictions on its long as its content is in no way
                                                                                                      (By similarity). onin (HSP60) family.
                                                                                                                                                                                                                                                                                                                                                                                                                        TVKDMSGEAISSTGASLRSTVNNLRHRSAPE-
| | :::| ::| :| :| :
ATNSTS-ETLAATPKAVKSAYDNAEKRLQKDQ
                                                                                                                                                       eptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AQSKSTA-
                                                                                                                                    composed of two stacked
                                                                                                                                                                                                                                                           *•
                                        (See
                                                                                                                                                       promotes the refolding ptides generated under
                                                                                                                                                                                  helveticus groESL operon."
                                                                                                                                                                                                                                                             Lactobacillaceae;
                                     . Usage
http://w
                                   e by and for commerciate/
/www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                              -ESAATRAETAAKRA
                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -ASAAKTSETN
                                                                                                                                    rings
                                                                                                                                                               and
                                                                                                                                                       stress
                                                 commercial
                                                                                                                                    of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    345
                                                                                                                                                                                                                                                                                                                                                                                                                         504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        364
                                                                                                                                                                                                                                                                                                                                                                                                                                                              449
                                                                                                                                                                                                                                                                                                                                                                                                                                           464
```

```
RESULT
FLJB_SJ
ID FI
AC PU
DT 00
                                                                                                                                                                            δÃ
                                                                                                                                                                                         당
                                                                                                                                                                                                   9
                                                                                                                                                                                                                용
                                                                                                                                                                                                                           ΛÖ
                                                                                                                                                                                                                                      D<sub>D</sub>
                                                                                                                                                                                                                                                  QY
                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                     5
                                                                                                                                                                  밁
                                                                                                       δ
                                                                                                                                           명
                                                         S
                                                                                Ãδ
                                                                                                                    8
                                               망
                                                                     밁
                                                                                             밁
                                                                                                                                                                                                                                                              Mα
                                                                                                                                                                                                                                                                   BO
                                                                                                                                                                                                                                                                   est 1
                                                                                                                                                                                                                                                              tches
                                                                                                                                                                                                                                                                                   HAMAP; MF
InterPro;
InterPro;
Pfam; PFC
PRINTS; F
PROSITE;
Chaperone
SEQUENCE
FLJB_SALAE
P52615;
01-0CT-1996
                                                                                                                                                                                                                                                                                    Chaperone;
SEQUENCE
                        ALAE
                                                                                                                                                                                                                                                                        Ma
                                                                                                                                                                                                                                                                   Ö
                                                                                                                                                                                                                                                                         tch
                                                                                                                                                      206
                                                                                                                                                                                                                                                                   ρ
                                                                                                                    286
                                                                                                                               7
                                                                                                                                           N
                                                                                 37
                                                                                             Û
                                                                                                         ω
                                                                                                                                                                                                    19
                                                                                                                                                                                                                                                              109
                                                                                                                                                                  J
                                                                                                                                                                              \boldsymbol{\omega}
                                                                                                                                                                                                                S
                                                                                                                                                                                                                            7
                                                                                                                                           37
                                                                                                                                                                                         \boldsymbol{\vdash}
                                                                                                                                                                                                                                                   N
                                                          N
                                                                     61
                                                                                             \rightarrow
                                                                                                         N
                                                                                                                               O/
                                                                                                                                                                                                                                                                                    MF_00600; -; 1.

co; IPR001844; Chaprnin_(co; IPR002423; Cpn60/TCP-PF00118; cpn60_TCP1; 1.

PR00298; CHAPERONIN60.

PR00304; TCOMPLEXTCP1.

PR00304; TCOMPLEXTCP1.

pne; ATP-binding.

540 AA; 57638 MW;
                                                                                                         Ö
                                                                                                                                                                                         Θ
                                                                                                                                                                                                                 \boldsymbol{\omega}
                                                                                                                                                                                                                            J
                                                                                                                                                                                                                                       N
                                                                                             N
                                                                                                                                                                  00
                                                                                                                                                                              \mathbf{\omega}
                                                          Œ
                                                                                                                               ω
                                                                                                                                                                                                    Ąϝ
                                                                                                                                                                                                                            O
                                                                                                                                                                                                                S
                                                                                                                                                      QVVDMG
                                                                                                                                                                                         Q
                                                                                                                                                                                                                                       AKDI KF
                                                                                                                                                                                                                                                              200
                                                                      KKID
                                                                                                                    O
                                                                                                                                S
                                                                                                                                           [F] ··
                                                          TVKLAKTVKDMSGEAI
                                                                                                                                                                                                                            ID
                                                                                                                                                                                                                                                   ເນັ
                                                                                                                               SOV
                                                                                                                                          IVQQ
                                                                                                                                                                                                                H -
                                                                                                                    LQDIAALTGGTVITEDLGLELKDTK
                                                                                                                                                                  RG
 \varphi
                                                                                                         PLDVATDGLKAVRSLVS
                                                                                                                                                                                                     E
T
                                                                                                                                                                                                                                                   DAS
                                                                                                                                                                                                                H
                                                                                                                                                                                                                LKDRY
                                                                                                                                                                                                                                                                   \vdash
                                                                                                                                                                                                                                                              O
                                                                                                                                                                                          X
                                                                                                                                                                                                                                                              onse
Re
                                                                                                                                                                                                                                                                   þ
                                                                                  Š
                                               (T)
                                                                      [1]
                                                                                                                               RDQLRGGAFV
                                                                                                                                                                                                                                                   LAS.
                                                                                                                                                                                                                                                                   ħ.
                                                                                                                                                                                                     T
                                               RLAKLTGGVAVI
                                                                                                                                                                                     RAAVDELHKI:
                                                                                                                                                                                                    FAAASVLQYMQPAINKGDWLA-
                                                                                                                                                                                                                                       SENARRSL-
                                                                                                                                                      IAVQTES
                                                                                                                                                                  (1)
                                                                                  LSNLVGSVGVF
                  S
                                                                                             I DQLGQARRI
                                                                                                                                                                                                                                                                   ct
                                                                                                                                                                  ST
 . .
                   Н
                                                                                                                                                                                                                                                              y
rva
                                                                                                                                                                                                                ENMGAKLVAEAAQKTNDIAGDGTT
                                                                                                                                                                                                                                                   S
                  ANDARD
                                                                                                                                                                 SVVEGMQFI
                                                                                                                                                                                                                                                   SVRSVS
34,
34,
                                                                                                                                                                                                                                                              rt
                                                                                                                                           KSLLI
                                                                                                                                                                              KMMDRARGDL-HYLS
                                                                                                                                                                                                                                                             20.:
Creat
Last
                                                                                                                                                      ALNVVRTVLAPALAS
                                                                                                                                                                                                                                                   ⊶
                                                                                                                                                                                                                                                                    Θ
                                                                                                                                                                 DRGY.
                                                                                                                                                                                     SHKVESKDQIANVAAV
                                                                                                                                           IADDITGEALPT
                                                                                                                                                                                                                                                   ы
                                                                                                                                                                                                                                                                    ᅄᅃ
                                                                                                                                                                                                                            ALVETRANRLYSEGET PAT I AETFAKAEKFDR:
                                                                                                                         LGMKDKEPKAALS
                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                   34 34
                                                          S
                                                                                  \rightarrow
                                                                                             SATSLTKNGLALAGGYA
::||: :|| |
---TVTKDSTTIVGG-A
                                                                                                                                                                                                                                       LKGVDKLADTVKTT I GPKGRNVVL
                                                                                                                                                                                                                                                   CRDLQAITDY LKHHVF
                                                          S
 9
       ፎ
                                                                                                                                                                                                                                                              2
                                                           TGASLRS
                                                                                                                                                                                                                                                                   Sc
                                                                                                                                                                  2
 quenc
                                                                                                                                                                                                                                                              50
                                                                                                                                                                                                                                                                                                                        שו
                                               GIN
                                                                                                                                                                                                                                                                                                                       Con
Logn
                                                                                                                                                                                                                                                                                                 CPN6
                                                                                                                                                                                                                                                                         core
                                                                     | ||: :|: |:| : |
HVGAATETELKERRYRIEDALNS
                                                                                  TAGLATDPAVKKAESF
                                                                                                                                                                  ILAMAÑ
                                                                                                                                                                                                                                                                    ed
                                                                                                                                                                                                                                                                                     4
                   RT
                                                                                                                                                                                                                                                              Mismatche
                                                                                                                                                                                                                                                                                     25
                                                                                                                                                                                                                                                                                                                              g
                  50
                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                              0
  Φ
                                                                                                                                                                                                                                                                    o
O
                                                                                                                                                                                                                                                                                      DDB
                                                                                                                                                                                                                                                                                                *•
                                                                                                                                                                              TSPDKLH-
                                                           TVNNLRHRSAPEADIE
update
                                                                                                                                                                  DNDKMEADLDNPY
                                                                                                                                                                                                                                                                                                -
                  S
                                                                                                                                            LVLNKIRGT
                                                                                                                                                                                                                                                                                     45
                                                                                                                                                                                                                                                                         ~.
                                                                                                                                                                                                     TPLKPLTPLIS
                   0
                                                                                                                                                                                                                                                                    0
                   0
                                                                                                                                [T]
                                                                                                                                                      RPSVQGAVDFGVST
                                                                                                                                                                                                                                                                                      ıΤ]
                                                                                                                                ഥ
                                                                                                                                                                                                                 TAT
                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                              (g
                                                                                                                                                                                                                                                                   DB
4;
                                                                                                                                                                                         S
                  8
                                                                                                                                TOWLDAYKAI
                                                                                                                                                                                         SAS
                                                                                             AGSKEAI DERVDT I R
                                                                                                                                                                                                                                                  AAHRE
                                                                                                                                                                                                                 VLTQA
                                                                                                                                                                                                                                                                                      4B
                                               P
                                                                                                                                                                                                                                                              \mathbf{L}
                                                                                                                                                                                                                                                                          +--
                                                                                                                                                                                         盗
                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                         ~ •
                                                                                                                                                                                                                                                                                      4
                                               Š
                                                                                                                                                                                                                                                              \boldsymbol{\omega}
                                                                                 IQDKVKS
                                                                                                                                                                                         Н
                                                                                                                                                                                         IGALIADAMEJ
                                                                                                                                            FNVVA
                                                                                                                                                                                                                                                                                      O
                                                                                                                                                                                                                                                   IVS
                                                                                                                                                                                                                                                                          Le
                                                                                                                                                                                                                 IARE
                                               IAE
                                                                                                                                                                  ILIT
                                                                                                                                                                                                                                                                                      RC
                                                                                                                                                                                                     GALSGAMD
                                                                                                                                                                                                                                                              \mathbf{H}
                                                                                                                                                                                                                                       EQS
                                                                                                                                                                                                                                                              ğ
                                                                                                                                \sim
                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                     Q)
                                                           H
                                                                                                                                                                                                                                                                          \Box
                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                                                                                                              Φ
                                                                                                                                                                                                                                                                          \supset
                                                                      TRAA
                                                                                                                                                       AGG
                                                                                                                                                                  DKKI
                                                                                  -∃
                                                                                                                                S
                                                           4
                                                                                                                                                                                                                                        YGNI
                                                           69
                                               G
                                                                                                                                                                                                                                                              U
                                                                                                                                                                                                                                                                          Çī
                                                                                  S
                                                                                                                                                                                                                                                   S
                                                                                                                                ĸ
                                                                                                                                (V)
                                                                                                                                                                                                                                                                           4
                                                                                                                                                                  SNIQDILPLL-
                                                                                                                                                                                         :||
|KVGHDGVI
                                                                                                                                                                                                                            LATTAS
                                                                                                                                                                                                     QVG
                                                                                                         KMATKNITDS
                                                                                                                                GAALNAGKRMAG
                                                                                             ã
                                                                                                                                                      VANAGE
                                                                                                                                                                                                                 /TAGANPVGI
                                                                      /DEGYVAGGGTA
                                                                                                                                                                              /SVKRHS
                                                                                                                                            χχ<del>ρ</del>
                                                                                                                                                                                                                                        DITNDGVTIAK
                                                                                                                                                                                                                                                   DERDAALAHNE
                                                                                                                                                                                                                                                              42
                                                                                             : : ;
                                                                                                                                                                                                                                                              4
                                                                                                                                            GFGDRRKA
                                                                                                                                                                                                                                                              80
                                                                                                                                                      GĐ-
                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                              PALG
                                                                                                                                                                                          Н
                                                                                                                                                      RML
                                                                                                         ΑŢ
                                                                                                                                                                                                                 Ħ
                                                                                  g
                                                                                                                                                                                          Ħ
                                                                                                                                                                                                                            W
                                                                                                                                                                  O
                                                                                                                                                                                          D
                                                                                                                                                                              Z
                                                                                                                                319
                                                                                                                                            285
                                                                                             360
                                                                                                                                                                  236
                                                                                                                                                                              205
                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                    J
                                                                                                         371
                                                                                                                     311
                                                                                                                                                       N
                                                                                  427
                                                                                                                                                                                                                 17
                                                                                                                                                                                                                            18
                                                                                                                                                                                                     67
                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                              24;
                                                                                                                                                      62
                                                                                                                                                                                          J
                                                                                                                                                                                                                                         J
```

```
Que
Bes
Mat
                                                                                                                                                                                   CONVERSION OF THE PARENT OF THE PROPERTY OF THE PARENT OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Salmonell
Bacteria;
Bacteria;
Enterobac
NCBI_Taxl
[1]
[1]
SEQUENCE
MEDLINE=S
Okazaki N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE (
MEDLINE=90
Hanafusa 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   use by modified and entities or send ar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         between
the Euro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
Mol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          pha
J.
[2]
SEQ
                                                                                                st L
;che
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Thi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hanafusa T., Saitko I
"Nucleotide sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        はなの
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 478-501 FROM N.A.

**REDLINE=93173100; PubMed=8437573;

**Hanafusa T., Saitko K., Tominaga A., Enomoto M.;

**Hanafusa T., Saitko M.;

**Hanafusa T., Saitko K., Tominaga A., Enomoto M.;

**Hanafusa T., Saitko K., Tominaga A., Enomoto M.;

**Hanafusa T., Saitko K., Tominaga A., Enomoto M.;

**Hanafusa T., Saitko M.;

**H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          art.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YAM-0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | :-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acteria; Proteobacteria; Gammaç
nterobacteriaceae; Salmonella.
CBI_TaxID=607;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               is SWISS-PROT entry is copyright. It tween the Swiss Institute of Bioinfo e European Bioinformatics Institute. e by non-profit institutions as lodified and this statement is not remotities requires a license agreement (send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                             Ű
                                                                                                                                                  Ma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ø
                                                                                                                           Ś
                                                                                                tch
al
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \sim 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           200
   \boldsymbol{\omega}
                                                   N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     £1
                                                                                                     S
HINQSAQQPPO
                                                                                                imi
!;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  agel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Rel
elli
                                                                                                    C \vdash
                                                                                                    on
QSALGTAIERLS
                                                                                                    Ω H·
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5 •
                                                                                                    Φ τ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PubMed=8423149;
to S., Saito K., Tomi
te Salmonella phase 1
on the Escherichia
:758-766(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                  GVAME
                                                                                                     ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ct :
                                                                                                     FO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Las
                                                                                                     5.
1.
                                                                                                                             4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               đ
                                                                                                                             do do
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gammaproteo
                                                                                                                                                                                                      ĭw;
                                                                                                                             Sec. 34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            annotati
                                                                                                    71
   S
                                                                                                                                                                                                                                                                                                                                                                                                           ם בן
                                                                                                                                                                                                                                                                                                      <u>`</u>
   G)
                                                                                              Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                          맆
                                                                                                                                                                                                                        S
B
K
 LRINS
                                                                                                                                                                                                 SIMILARITY.
-> L (IN REF. 2).
336D6F8F0EAA56CC C
                                                                                                                                                                                                      ω
                                                                                                                                                                                                                                                                                                     7
                                                                                                                                                                                                                                                                                                                                                                                                                             ്റ
                                                                                                    ed. No
Misma
                                                RTAS
   Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                             Z
O
                                                                                                                                                  -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          t (See
ch).
                                                                                                                                                30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The Partie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              emoved.
                        DASLASSSVRSVSTTSCRDLQAITDYLKHHVFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    naga A., Enomoto M.;
flagellin gene fliC to
coli K-12 chromosome.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bacteria;
                                                                                                       tches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    t is produced formatics and
   -DAAGQAIANRFTANI KGLTQASRNANDGISI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                           DB
0.93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            matics and the EMBL outstation
There are no restrictions on ing as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . Usage by and for commercial http://www.isb-sib.ch/announce/
                                                                                                                                                <u>,,</u>
                                                                                                     232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ced through
                                                                                                                                                 Length 500;
                                                                                                                                                                                                      CRC64;
                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gn a collaboration EMBL outstati
                                                                                                     104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the
                                                                                                   Gaps
 73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    way
                                                                                                   24;
```

QУ

RA OCC OCC

PRETARRANGE SOOS PETT TO EE 20 50 8 Λõ Š 유 망 Š Š 8 밁 밁 밁 밁 Š Caulobacter crescentus.
Bacteria; Proteobacteria; J
Caulobacteraceae; Caulobact
NCBI_TaxID=155892;
[1]
SEQUENCE FROM N.A., AND SE(
STRAIN=ATCC 19089 / CB15;
MEDLINE=93007489; PubMed=1;
Gilchrist A., Fisher J.A.,
"Nucleotide sequence analy: S-layer RSAA OR P35 P35 16-16-28-1 crescentus paracrystalline Can. J. Microbiol. 38:193-2 [2] REVISIONS TO 376; 636 AND 8 :AUCR :LAP :3582 AP_CAUCR 5828; Q4601 -JUN-1994 (-OCT-2001 (-FEB-2003 (443 187 35 w Ś 238 N \sim N 94 $\boldsymbol{\omega}$ N 27 74 4 Ø Φ S Ü -O/ 0 Ó Ō Ô $\boldsymbol{\omega}$ Q46015; Q9RF 1994 (Rel. 29 2001 (Rel. 40 2003 (Rel. 41 protein (Par CC1007. N N $\boldsymbol{\sigma}$ GGYA----IIII
GGYALKAGI AHRF. DGKT GOTO AGLATDPAVKKAESF TDAGDTAKNGKYEVTVDSATGAVS S DRARGDLHYLS SSTGASI ET STYSDGTQALTAP DWLDAYKAIKSASYSGAALNAGKRMAGLPLDVATDGLKAVRSLVS SANY RP FNGVKVLAQDNTLTIQVGANDGET SVIGSPDERDAALAHNEQIDALVETRANRLYSEGETPATIAETF **ENT PFAAASVLQYMQPAINKGDWLAT** DA-SVQGAVDFGVSTAGGLVANAG STANDARD; Q9RFI2; 1. 29, Cr 1. 40, La; 1. 41, La; (Paracry; EGALNEINNNL-: LRSTVNNLRHRSAPEADIEEGG:||||| | : ||:
--NTVNNL---SEARSRIEDSDY PubMed=1393820; DKY YAADY KAAGHDF ATKKALQDGGVSSADASAA-|:| J.A., : Cre Cre Las Las rea DKLHDAMAVSVKRHSP KAQPE ਜ਼ਿੰਜੇਜ਼ DEATGAIK-O IQDKVKSTASSTTSYVADQ-TVKLAK-EQUENC 4 > Ø N rt surface : 202(1992) sequence annotati Smi <u>e</u> 42 φ <u>i</u> ה ה QRVRELAVQSANSTNSQSDLDSIQAE LAEAAAKT GVSKLQKMAT TATDIKof f 843 [11] tħ. 0 0 e ul ion iurfi AKTTS Д. (1 ne gene layer p update FGD FQ upd TENP IDIDLKQINSQTLGLD DYATEVSNMS -AALGNPTVTGDTLTAAVS Z S O YTAADGT RMLSVQS ALGRQVV e encoding SKI Φ Ø te ay ISAF Н ATPTKSTVTGDTAVT $\boldsymbol{\sigma}$ DSATKAAVSQLSNL 4 $\boldsymbol{\sigma}$ Н SRS RDQLRGGAFVL g ס R_AO O Q) DMGI. 0 **= Q** O [1] **AANQLGGV** AND GA-47 : AVQT Φ TLVKMSYTDKNGKTIE ij Q O S 11 QRLNEIDRV-ATSLTKNGLALA DGKTEVV VGSVGVFAGWT KVQVNAPVAA-KDGKYYATVS QKAY DVSAT DVI SGAMDQVGTKMM ALNVVRTVLAP KAEKFDRLAT 0 Ø TVKDMSGEA VQNRFNS N PKAALS Š Н ы დ .. 442 349 186 381 393 288 237 71 25 68 29 26 +--Ş

```
Proc. Natl. Acad. Sci. U.S.A. 98:4136-4141(2001).

MEDLINE-89008089; PubMed-304945;

MEDLINE-89008089; PubMed-304945;

MEDLINE-89008089; PubMed-304954;

MEDLINE-98292737; PubMed-9620954;

MEDLINE-898292737; PubM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.

STRAIN=ATCC 19089 / CB15;

MEDLINE=21173698; PubMed=11259647;

Nierman W.C., Feldblyum T.V., Laub M
Eisen J., Heidelberg J.F., Alley M.R
Potocka I., Nelson W.C., Newton A.,

DeBoy R.T., Dodson R.J., Durkin A.S.

Kolonay J.F., Smit J., Craven M.B.,

Utterback T., Tran K., Wolf A., Vama
Salzberg S.L., Venter J.C., Shapiro
"Complete genome sequence of Cauloba
Proc. Natl. Acad. Sci. U.S.A. 98:413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=JS3001;
Bingle W.H., Awr
"The secretion s
the C-terminal 8
Submitted (OCT-1
[4]
SEQUENCE FROM N.
SEQUENCE FROM N.
STRAIN=ATCC 1908
MEDLINE=21173698
Nierman W.C., Fe
Eisen J., Heidel
Potocka I., Nels
                                                                                        use by
modified
                                                                                                                                                   This SWI
between
the Euro
                            entities or send a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Awram
Submi
{3]
SEQUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QUENCE I
                                                                                    SWISS-PROT entry is copyright. It is produced een the Swiss Institute of Bioinformatics and European Bioinformatics Institute. There are response to the statement is not removed. Usage field and this statement is not removed.
                                                                                                                                                                              SWISS-PF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "P.;
                              s requires
an email t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FROM N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (OCT-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Awram P.A.,
on signal of
al 82 amino
CT-1999) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         À
                                                        ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \overline{\phantom{a}}
license agreement (S
license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  т.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nomellini J.F., Smit J.K.;
C. crescentus S-layer protein
acids of the molecule.";
the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Durkin A., Stephens C., Phadke N.D., Ely B., raven M.B., Khouri H., Shetty J., Berry K., olf A., Vamathevan J., Ermolaeva M., White OC., Shapiro L., Fraser C.M.; of Caulobacter crescent; S.A. 98:4136-41417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL/GenE
                                                    It is produced through a collaboration nformatics and the EMBL outstation - e. There are no restrictions on its long as its content is in no way emoved. Usage by and for commercial t (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                locat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
```

AF062345

AAC38665

¢ 0

Þ

SQ SQ RESULT Y868_CF ID YE AC QS Λõ S δõ 망 50 Š 밁 멍 맑 Š 밁 δÃ 밁 50 9 Š 8 Ma Be L ē EMBL; AF193063; AAF19: EMBL; AE005779; AAK22: PIR; A48995; A48995. HSSP; P22629; 1SWC. TIGR; CC1007; -. InterPro; IPR001343; Pfam; PF00353; hemoly: PRINTS; PR00313; CABNICell wall; S-layer; Cainit Met 0 SeQUENCE 1025 AA; SEQUENCE 1025 AA; SEQUENCE 1025 AA; tches St CHLMU 7868_CHLMU CHLMU Loc Ma 101 tch 282 N w N N 43 73 œ 18 82 N 22 45 85 42 85 25 43 N 41 æ N ð Ö 9 8 VETRAN GALS: VSYAQTVATAYDKIIGNAVAT VDSTTNTNDLNDAYYSKimi VGVE KEP DKIHDAMAVSVKRHSPALGRQVVDMGIAVQT SDASLA: GVS 3 H SVLQYMQPAINK-0 439 446 KAALSEET DWLDAYKAI KSASYSGAALNAGKRMAGLPLDVATDGL GGAGT DVLNWVQA arity AGWI onse TDNAAGVNLFTAYP H LALAGGY AGVSKL-S AGGL TANDARD; .. s 77 Ŋ TAGLAT DP. GVTGLTALN Ø ; Hemlysr lysinCabi BNDNGRPT. Calcium-bindin 93 29 TT. 10086 21. ive RLYSEGETPAT 9 9 • • . 0 8 \vdash \circ -GDWLATI -VANAGEGDRMLSVQS-.. IS AVKKAESFIQDKVKSTASSTTSYVADQTVKLA ____ ANSAASGTVSVSVANS AVAIQT O 50.50 Se Se ₩; in_Ca SSGVSGSTLSLT RDLQAITDYLKHHVFAAHRFS ALT Score Pred. 200 core S RT. GAAQTVTAGAGQNLTATTAAQAANNV bind 3. INI AD7A326E1 ন্ব - \rightarrow ismatches Ó [17] 130; No. H Н ~ • AAVTA PLI FAKAEKF FAQENRF Comp1 4 **FOY** S ----N Q 4 G GALSGAMDQVGTKMMDR 12)); 36 RDQLRG-SALNVVRTVL 9 QKMATKNITDSATKAAVSQLS GVAP: 3D8 **AAGVDVAAAVAFLS** Ę فيبؤ Φ TTGAIA-VTGGTA O 50 ď 2 S GTANNDT \mathbf{o} S ťΤ INLATGAGAG DRLATTASSA VIGS ζ 0 CRC6 eng TGVT Ų. G 5 סי GGY A DERD **FVAG** Ø Φ 4 ₽ SG 24 O \rightarrow AVTVAQTAGNAVN ROANIDYLT ETM-KTVKDMSGEAI TATAAMINDLS 25 KAVRSLVSATS EVAGAATLTVG AALAHNEQIDA | | :|: | | AVDGGANVTVAS S ENT PE RGDLHYL RP 0 GAFVLGMKD SIAN-SVQGAVI NI-Aaayt Gap, --LDF GA.A ໙ົ ត្ត S S (C) H --D U Ą G — თ Ď 341 383 38 281 224 242 \mathbf{a} $\boldsymbol{\omega}$ 437 444 84 28 7 8 N Q \vdash N N Ç ω \mathbf{a}

```
ΛÕ
                                                                                                                                                                                                                                                                                                                                R
                                                                  50
            γΩ
                                        QУ
                           밁
                                                      밁
                                                                                 뭉
                                                                                                           Query
Best I
Matche
                                                                                                                                                                                                                                             Read T.D., Brunham White O., Hickey E Linher K., Weidman Gwinn M., Nelson W Eisen J., Fraser C "Genome sequences pneumoniae AR39."; Nucleic Acids Res.
                                                                                                                                                                                                                                                                                                          SEQUENCE FROM STRAIN=MoPn / MEDLINE=201502
                                                                                                                                       EMBL; AE002
PIR; G81655
TIGR; TC086
Hypothetica
SEQUENCE
                                                                                                                                                                                modif:
entiti
                                                                                                                                                                                                                                                                                                                  Hypo
TC08
Chla
Bact
NCBI
[1]
SEQUI
                                                                                                                                                                                                     This
betw
the
                                                                                                                                                                                                                                                                                                                                                          16-OCT-2001
16-OCT-2001
16-OCT-2001
Hypothetical
IC0868.
                                                                                                             he
                                                                                                                                                                                                                                                                                                                                     lamydia mucteria; Ch
                                                                                                                                                                                                                   is SWISS-PROT
tween the Swi
                                                                                                                                                                                                                                      cleic Acids
- SIMILARITY
FAMILY.
                                                                                                                                                                                 by by dified tities send a
                                                                                                                          Ma
                                                                                                                   Ō
                                                                                                             (a
                                                                                                                    ā
                                                                                                                                                                                                            European
                                                                                                                    tch
              234
                           15
                                         77
                                                      90
                                                                   N
                                                                                 30
                                                                                               99
                                                                                                             85
S
                            0
φ
                                                                                                                                                                                                                                                             FROM N.A.

ppn / Nigg;

20150255; PubMed=1

, Brunham R.C., S,
Hickey E.K., Pet

(., Weidman J., Kho
Nelson W., DeBo
Per C.M.;

of Chla
                                                                                                                                                     1002353;
1655; G8
10868; -
                                                                                                                                                                                  an
                                                                                                                                                                               non-profit and this st requires a an email to
                                        AHTIO
                                                              ENTPFAAASVLQYMQPAINKGDWLATPLKPLTPLISGAL----SGAMDQVGTKMMDRARG:: | | : : | | : : | | : : | | : : | | : : | | : :
                                                                                 DKNGAAAKTQQQEEASF
              RP
                           Ś
                                                      CASQTATAQAVRGARSSG
                                                                                              DERDAALAHNE
                                                                                                                                                                                                                                                                                                                                      mur.
Ch1.
                          |
|AKSWS
                                                                                                                   Πį
                                                                                                                                               œ
                                                                                                                                        1 prote
                                                                                                                                                                                                                                                                                                                                                                   \vdash
G
             SVQGAVDFGVSTAGGLV-
                                                                                                                                                                                                                                                                                                                                                                 (Rel
(Rel
(Rel
                                                                                                            ο'n
                                                                                                                                                            53; AAF:
G81655
                                                                                                                                                                                              ROT entry is copyright. It is produced through a collaboration Swiss Institute of Bioinformatics and the EMBL outstation - Bioinformatics Institute. There are no restrictions on its - profit institutions as long as its content is in no way this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                       amydi;
3560;
                                                                                                            ari
                                         S
                                         1
                                                                                                                                                                                                                                               BELONG!
                                                                                                             0 1
                                                                                                                                                                                                                                                                                                                                                                   4 • • •
                                                                                                                                       ein
                                                                                                                                                                                                                                                                                                                                                     Ħ
                                                                                                                                                                                                                                                                                                                                                                   Φ
                                         T
                                                                                                             4
                                                                                                                                                                                                                                                                                                                                              þ
                                                                                                                                                                                                                                                                                                                                                                   444
                                                                                                             PA.
                                         DKLHDAMAV
                                                                                                                                                                                                                                                                                                                                                                   3000
                                                                                                                                                                                                                                                                                                                                              Φ
                                                                                                                                                                                 license
                                                                                        QIDALVETRANRLYSEGETPATIAETFAKAEKFDRL----ATTASSAF
                                                                                                             ct
                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                              50
                                                                                                                                                                                                                                                                                                                                                                        . . .
                                                                                                                                                                                                                                                                  .;
Chlamydia
                                                                                                                                        Comple
13891 M
                                                                                                             下る
                                                                                                                                                                    O)
                                                                                                                                                                                                                                                                                                                                                                  Las
Las
C08
                                                                                                            5.4
20.1
                                                                                                                                                                                                                                                                                                                                              CH1
                                                                                                                                                                                                                                               13
S
                                                                                                                                                                    Ō
                                                                                                                                                                                                                                                                               Peters
Khouri
                                                                                                                                                                    4
                                                                                                                                                                                                                                                HΨ
                                                                                                                                                                                                                                                                                                    Shen
                                                                                                                                                                                                                                                                                                           1068
                                                                                                                                                                                                                                                                                                                                                                   944
                                                                                                                                                                                                                                                                                                                                              amydiales;
                                                                                                                                                                                                                                                0 7
                                                                                                                    op op
                                                                                                                                                                                se agreement
se@isb-sib <
                                                                                                                                       MW
MW
                                                                                EDLIQDSQGTGKSKKASTSQTSKSGKSEKAQKSSGTTTTTSVA
                                                                                                                                                                                                                                                                                                                                                                   \mathbf{\omega}
                                                                                                                   Sec. 54.
                                                                                                                                                                                                                                                                                                                                                                         sequence
annotati
                                                      FNNDGSAS
                                                                                                                                                                                                                                              1406
THE (
                                                                                                             67
                                         SVKRHSP
                           თ —
                                                                                                                                                                                                                                                                               H T
                          FQQQNQAI
                                                                                                                                        -- L4
             ANAGE
                                                                                                                                                                                                                                                                                                           49
                                                                                                                   S G
                                                                                                                                              O
                                                                                                            50
                                                                                                                          core
                                                                                                                                                                                                                                                                                                    O
                                                                                                                    н
                                                                                                                                                                                                                                                                              n J., Utterward
H., Craven B.,
Kolonay J., Mo
                                                                                                                                                                                                                                               S (2000)
                                                                                                                                        5 4
                                                                                                                                                                                                                                                                   T.
                                                                                                                                                                                                                                                                                                            \omega
                                                                                                                                                                                                                                                                                             J.
                                                                                                                                       )ro
                                                                                                                                                                                                                                                                   racho
                                                                                                                                                                                                                                                                                                           Ç
                                                                                                            e 129; DB
. No. 0.9;
ismatches
                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                          P- 0
                                        ALGRQVV--
                                                                                                                                        70
              GDRMLSVQSRDQLRGGAFVLGMKDKEPKAALSEET
                                                                                                                                                                                                                                                                               ill S.R., Heidelberg Utterback T., Berry I
Traven B., Bowman C., I
Dnay J., McClarty G.,
                                                                                                                                                                                                                                                                                                                                                                          9
                                                      | | ::| : | : :| | | :::
                                                                                                                                        ₩ 0
                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                 ch).
                                                                                                                                                                                                                                                                                                                                              Chlamydiaceae; Chlamydia
                                                                                                                                        Ome.
C9924CD7A48
                          DIAL
                                                                                                                                                                                                                                                                   matis MoPn
                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                        (See
                                                                                                                                                                                                                                               CPN0808/CT579/TC0868
                                                                                                                                                                                        http:/
                                        -DMGIAVQTFSALNVVRTVLAPALAS
                                                                                                             170;
                                                                                                                          1; Length 436;
                                                                                                                                                                                       Usage by an
ctp://www.isb-
                                                                                                                                                                                                                                                                   and Chlamydia
                                                                                                                                        CRC64;
                                                                                                             Indels
                                                                                                                                                                                                                                                                               J.F.,
K., Bass
Dodson R.
Salzberg
                                                                                                             100;
                                                                                                                                                                                         sib
-SAAFTNET
                                                                                                                                                                                         ch/announce/
                                                                                                            Gaps
                                                                                  68
              292
                                                      149
                           198
                                         233
                                                                    176
                                                                                                             14;
```

```
γŞ
                                                                                                                                                                                                                                                                                                       δõ
                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                              γ
                                                                                                                                                                                                                                                          Ą
                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                몽
                                                                                                                                                                                                                        N O
                                                                                                                                                                                                                        F E
       SPCP_RAT
SPCP_RAT
Q9QWN8; O88197; Q9ES68;
Q9QWN8; O88197; Q9ES68;
Q80WN8; O88197; Q9ES68;
Q80WREL Till Spectrin) (SPN
Protein GTRAP41).
SPTBN2.
RATTUS norvegicus (Rat).
SPTBN2:
RATTUS norvegicus (Rat).
SEQUENCE FROM N.A.
STRAIN=Sprague-Dawley; Ohara O., Ohara R., Yama "Characterization of a rexpressed in brain.";
Brain Res. Mol. Brain Res. (2)
SEQUENCE FROM N.A.
STRAIN=Sprague-Dawley; Ohara Y.;
"A novel brain-specific interaction with Munc13 Biochem. Biophys. Res. (3)
SEQUENCE FROM N.A.
Rothstein J.D., Jackson "GTRAP41- a cytoskeleta. Submitted (JAN-2000) to -1- FUNCTION: Probably Inskeleton.
kel
                                                                                                                                                                                                                                                                                            274
                                                                                                                                                                                                                                                                                                                    236
                                                                                                                                                                                                                                                                                                        C
                                                                                                                                                                                                                                                                                                                              2
                                                                                                                                                                                                                                                                      w
                                                                                                                                                                                                                                                           4
                                                                                                                                                                                                                                                                                 7
                                                                                                                                                                                                                                                           71
                                                                                                                                                                                                                                                                                                        Ç
                                                                                                                                                                                                                                                                                                                              93
                                                                                                                                                                                                                                                                      O
                                                                                                                                                                                                                                                                                 -
                                                                                                                                                                                                                                                                                 w
                                                                                                                                                                                                                                                                                                        Û
                                                                                                                                                                                                                                                                       \mathbf{\omega}
                                                                    E FROM N.A.
Sprague-Dawley; TIS
=98369639; PubMed=9
hi G., Orita S., Na
eton
                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                     — ଦ
                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                               DWLDAY KAIKS
                                                                                                                                                                                                                                                                                             AAS
                                                                                                                                                                                                                                                      → ⊢
                                                                                                                                                                                                                                                                       GNALINT PNW-
                                                                                                                                                                                                                                                                                                        W
                                                                                                                                                                                                                                                           7
 Ą
          1 N.A.

Jackson

Lytoskeletal

N-2000) to

Probably p
                                                                                                                                                                                                                                                                                 ASS
                                                                                                                                                                                                                                                           72
                                                                                                                                                                                                                                                                                             SAATKLTQNMTDTASKTLS
                                                                                                                                                                                                                                                \boldsymbol{\sigma}
ECIF
                                                                                                                                                                                                                                                                                                        KLQKMAT
                                                                                                                                                                                                           STANDARD;
                                                   specific th Munc13.
                                                                                                                                                                                                                                                                                  ₩.
                                                                                                                                                                                                                                                                                 TSYVADQTVKLAKTVKDMS
CITY
                                                                                                                       PubMed
                                                                                                                                                   Rat).
Chordata
Rodentia
                                                                                                                                                                               Creat
Last
Last
brain
(SPNB-3
                                                                                                                                                                                                                                                                                                  KNITDSATKAAVSQLSNLVGSVGVE
                                                                                                                 Yamakawa
                                                                                                                                                                                                                                                                                                                              ASYSGAALNAGKRMAGLP
                                                                                                            ø
                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                       EKIS
                                                                                                 Res
                                                                                                            new
                                                                                                                       TIS:
                                              Commun
                                                                    Nai
                  the
                                                    5 P.
                                                                                                                                                                                                                                                                                                                    : I :
            ays
                                                         30
                                                                          97
                                                                                S
                                                                          SUE=1
                                                                                                                                                                                                        ct
                                                                                                                                                                                                                                                                       RGLNVVKTQGGRAAQFAGRALS
                        lodul
                                                                                                                        or N
                                                                                                                                                                                sequence up
annotation
2 (Spectrin
3) (Beta SpI
                                                                                                            þе
                                                                                                                       UE
75
                                                                                                 57
                                                                                                                                                    CO CO
                                                                                                                                                                                                        8
                                                         fo
                                                                     ď
 ndant
                  EMBL/
                                                                                                                                                    31. 31
                                                                                                                                                                                                                                                                                                                    AAAKTAVNALDDVAN
                                                                                                                       =Br
                                                                                                 • •
                                                                                                            4
            an
                                                          H
                                                                                EB
                                                                                                                                                    Craniata; Ve
Sciurognathi
                                                                    \rightarrow
                                                                          -
                                                                                                            œ
                       O)
                                                                                                 1
                                                                                                 81-
                                                                                                                                                                                                                   77
                                                                          οų
                                              N
                       CT
                                                                                                                                                                                                                                                                                             QTASKAT
                                                                                                                             ain
            impor
                                                         of.
                                                                                                            spec
                       Q
                                                                          *
                                                                                Ø
                                              4
                                                                                                            Naka:
               or of EAAT
                                                                                                                                                                                                                   5.
                                                                                  ٠.
                                              Ф
                                                                     Ma
                                                                                                  -
                                                                                                                                                                                SpIII
                                                          ed
                                                                                                  Θ
                                              \mathbf{\omega}
                                                                                                                                                                                          update)
on update
                                                                                                                                                                                                                                                                                  GEAIS
                                                                                                                                                                                                                   N
                                              4
                                                                    Ф
                                                                                                 N
                                                                    da
                                                                                                                 Ú.
                                                                                                                                                                                                                   W
            tant
                                              S)
                                                          ta
                                                                                                             Н
                                                                                                             ami.
                                                                                                                                                                                                                   88
                                                                                                                                                                                                                                                                                                                               LOVAT
                                                                                                  \vdash
                                                                                                  (866
                                              Θ
                                                                                                                                                                               non-er
                                                                     Z
                                                          Ø
                                                                                                           gene
                                                                                                                                                                                                                   A
                                                       Ĝ
                                                                                                                                                                                                                                                                                  STGASLRS
                  U
                                                                                                                                                                                                                                                                                              GLF
 ٦
                                                                                                                   U
                  4 gl
                                                          Ō
                                                                                                                                                    50
                       4
                                                                                                                                                                                                                                                                                                                                U
                                                                                                                                                                                            Φ
            Ó
                                                                                                                                                          đ
                                                          O.
                                                                                                                                                   tebrata; |
Muridae;
                                                                                                                                                                                                                                                                                                                                GLKAVRS
 Ď
                                                                    \boldsymbol{\vdash}
                                              Ø
                                                          7
                                                                                                                                                                                                                                                                                                        AGMT
                                                                    gar
            0
                                              φ
                                                          Н
                                                                                                            Wh Na
                 databas
                        H
                                              8
                                                                                                                                                                                <u>-</u>
                                                                                                             ıkayama
ıich is
            ש
                                                                     Œ
                                                          - -
                                                                                                                                                                                                                                                                                                         TAGLATDE
                                                                     Sh
                                                                                                                                                                                       ч
                                                                                                                                                                                (Spec
            neuron
 the
                                                                                                                                                                                                                                                                                                                        : I
SAT
                                                                                                                                                                                                                                                                                 TVNNLRHRS
                                                                                                                                                                                                                                                                                                                  VAAT
                                                                                                                                                                                                                                                                       VMQS I
                                                                                                                                                         Eut
                                                          olat
                       Φ
                                                                                                                                                    Mur
                  89
                                                                                                            Q
                                                                                                                                                                                 4 0
                                                                                                                                                                                                                                                                                                                    \rightarrow
                                                                                                                                                                                                                                                                                                                           edom
                                                                                                                                                                                                                                                                       HGLT AGVDG
                                                                                                                                                                                                                                                                                                                    Ġ.
                                                                                                                                                                                                                                                                                                         AVKKAES
                                                          0
                                                                                                                                                                                                                                                                                                                    i K-
                                                                    asa
                                                          Þ
                                                                                                                                                                                                                                                                                                                                200
                                                                                                                                                    <sub>æ</sub> g
                                                                                                                                                                                 ⊢• Ø
                                                                                                            inantly
                                                                                                                                                                                                                                                                                 EADIEE
                                                                                                                                                                                 イド
                                                                                                                                                                                                                                                                                                                                LALLAGG
                                                                                                                                                                                                                                                                                                                    AAS
                                                                                                                                                    ii;
lattus
                                                                                                                                                                                 a b
                                                                                                                                                                                                                                                                                                         щ
                                                                                                                                                                                                                                                                                                         IQDK
 ons
                                                          ts
                                                                                                                                                                                                                                                                                                                    ĞA,
                                                                                                                                                                                                                                                                       7
                                                                                                                                                                                                                                                                       <u>റ —</u>
                                                                                                                                                                                                                                                                                                                                ĸ
                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                \omega
                                                                                                                                                                                                                                                                                                         41
                                                                                                                                                                                                                                                                                                                    27
                                                                                                                                                                                                                                                                                  470
                                                                                                                                                                                                                                                                                                                                Űΰ
                                                                                                                                                                                                                                                                                              07
                                                                                                                                                                                                                                                                       \boldsymbol{\sigma}
                                                                                                                                                                                                                                                                                                         N
                                                                                                                                                                                                                                                                                                                                N
```

O

```
are the predominant cell-type to exabundantly in Purkinje cells.

-!- SIMILARITY: BELONGS TO THE SPECTRIN-
-!- SIMILARITY: Contains 2 calponin-hom-
-!- SIMILARITY: Contains 1 PH domain.
-!- SIMILARITY: Contains 2 Ph domain.
-!- SIMILARITY: SMO0133; PH domain.
-!- SIMILARITY: SPECTRIN!
-!- SIMILARITY: SMO0133; PH domain.
-!- SIMILARITY: SPECTRIN!
-!- SIMILARITY: SPECTRIN!
-!- SIMILARITY: SPECTRIN!
-!- SIMILARITY: SPECTRIN!
-!- SIMILARITY: SMO0133; PH domain.
-!- SI
0003,
; Membr
57
176
305
425
531
641
747
852
958
1065
1172
                                                                                                                                                                                                                                                                                                                                                                     tivity; ISS.
activity; ISS.
ituent of cytoskeleton; TAS.
ilcium ion dependent exocytosis; T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAS
             It is produinformatics
                                                                                                                                                                     in-binding;
BINDING (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                long
emoved.
it (See l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RIN FAMILY.
homology (CH)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       repeats.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      express
           1.
2.
3.
4.
4.
5.
7.
10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            is produced through a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      There are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  e http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                     Capping protein SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                yn a collaboration
... the EMBL outstation -
e no restrictions on
s content is i-
ge by ar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 domains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Found
                                                                                                                                                                                                                                                                                                                                                                                                                        TAS.
```

g V	Qy Db	D Q	D D b	дь Qy	D Qy	Db Db	p v	χων	O 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
420 986	378 926	318 877	261 854	208 802	148 767	88 724	35 666	Query Match Best Local S Matches 101	REPEAT REPEAT REPEAT REPEAT REPEAT REPEAT DOMAIN CONFLICT
ATASELL	LSNLVGS- :: : KDRIIGTQ	AGLPLDVATI -GLALPERLI	FYTMLS	VDMGIAVQT T	LKPLTPLI : : RLV	RLYSEGETPATIA :: : ELQAQWERLEALA	STTSCRDLQAI : : SAETGRDLTGV	imilarity; Conser	1383 1488 1588 1694 1694 1801 2218 2218 326 543 608 887 908 1156 1156 1194 1555
YVADQTVKI : VLALQR-KI	EQLNQRWQ	TDGLKAVR: : : : LEDLEVVQ	VQSRDQLRGGAF EAGAC		LISGALSGAMDQ : : LVSSPEVG-HDE	E - E	Q.A TG	5.3 21.8 vative	1486 1586 1692 1799 1905 2011 2075 2328 328 328 328 343 608 948 1157 1194 1155 1769 AA; 2710
TTSYVADQTVKLAKTVKDMSGEAISSTGASLRSTVNNL 457 :	VGSKAESFIQDKVKSTASS- : : 	GLPLDVATDGLKAVRSLVSATSLTKNGLALAGGYAGVSKLQKMATKNITDSATKAAVSQ 	VLGMKDKEPKAALSEETDWLDAYKAIKSASYSGAALNAGKRM ::: GLWVEEKEQWLN	FSALMVVRTVLAPALASRPSVQGAVDFGVSTAGGLVANAGFGDR	VGTKMMDRARGDLHYLSTSPDKLHDAMAVSVKRHSPALGRQV :: h: :: FSTQALARQHRALEEEIRAHRP	AKAEKFDRLATTASSAFENTPFAAASVLQYMQPAINKGDWLATP : : : : : :	VFAAHRFSVIGSPDERDAALAHNEQIDALVETRAN 	%; Score 128.5; DB 1; Length 2388; %; Pred. No. 8.4; 51; Mismatches 168; Indels 143; Gaps	SPECTRIN 11. SPECTRIN 12. SPECTRIN 13. SPECTRIN 15. SPECTRIN 15. SPECTRIN 16. SPECTRIN 17. PH. VIL -> GIF (IN REF. 3). L -> F (IN REF. 2). D -> G (IN REF. 3). V -> I (IN REF. 3). V -> I (IN REF. 3). F -> V (IN REF. 3). EL -> GA (IN REF. 2). F -> V (IN REF. 3). G -> R (IN REF. 3). R -> W (IN REF. 3).
	419 985	377 925	317 876	260 853	207 801	147 766	87 723	18;	

```
RESULT 7
CH80_LACAC
ID CH80_LACAC
CH80_LACAC
ID CH80_LACAC
CH80_LA
                                                                                                                                                                          δÃ
                                                밁
                                                                              δδ
                                                                                                           Query Match
Best Local 9
Matches 11:
                                                \sim
                                                                                                               N H
                                                                             AS
                                                                                                             imi
                                                                              DASLASSSVRSVST
                                                                                                                               1
                                                   취
                                                                                                              ar
                                                                                                             ise
t
 HNEQIDALVETRA
                                                AENARRS
                                                                                                              rva
                                                                                                              ct
                                                                                                              トク
                                                                                                              5.
14.
                                                                                                                             \sim \omega
                                                                                                                              olo olo
                                                                               Ø
                                                                                                                             24. 24.
                                                LKGVDKLADI
                                                                              CRDLQAITDY
                                                                                                             Score
Pred.
-NRLYS
                                                                                                            e 128; DB 1;
. No. 1.4;
ismatches 196
 SEGETPATIAETFAKAEKFDRLATTAS----
                                            LKHHVFAAHRFSVI----GSPDERDAALA---:
:| : | |:|| : :
'VKTTIGPKGRNVVLEQSYGNPDITNDGVTIAK
                                                                             LKHHVFAAHRFSVI-
                                                                                                              196;
                                                                                                                                             Length 546;
                                                                                                             Indels
                                                                                                              146;
                                                                                                           Gaps
               S
                                               57
                118
                                                                             73
                                                                                                            26;
```

정	58 SIELKDHYENMGAKLVAEAAQKTNDIAGDGTTTATVLTQAIAREGMKNVTAGANPVGIRR 117	
Qy	119 AFENTPFAAASVLQYMQPAINKGDWLATPLKPLTPLISGALSGAMDQVG 167	
g	્ર :	
Qy	168TKMMDRARGDL-HYLSTSPDKLHDAMAVSVKRHSPALGR 205	
Ъ	178 SRGINTELSVVEGMQFDRGYLSQYMVTDNDKMEADLDNPYILITDKKISNIQDILPLL-Q 236	
QΥ	206 QVVDMGIAVQTFSALNVVRTVLAPALASRPSVQGAVDFGVSTAGGLVANAGFGDRMLS 263	
B	VAVKAP	
γ	264 VQSRDQLRGGAFVLGMKDKEPKAALSEETDWLDAYKAIKSASYSGAALNAGKRMA 318	
망	285 AQLEDIAALTGGTVITDDLGFELKDTK	
Qy	319 GLPLDVATDGLKAVRSLVSATSLTKNGLALAGGYAGVSKLQKMATKNITDSA 370	
B	312IDQLGQARRVTVTKDSTTIVDG-AGSKEAIKEREDSIRKQIEESTSDFD 359	
Qy	371 TKAAVSQLSNLVGSVGVFAGWTTAGLATDPAVKKAESFIQDKVKST-ASSTTSYVAD 426	
g	360 KKKLQERLAELTGGVAVIHVGAATETELKERRYRIEDALNSTRAAVDEGYVAGGGT 415	
γ	SGE-AISSTGA	
Db	INIVLRALS	
RESULT NCCB_A		
) (
DT A	(Rel. 37, Created)	
ם ק	(Rel. 37,	
DE	el-cobalt-cadmium resistance prote	
S & G	and criposoci	
ရှိ မ	id pTOM9.	
ဂို	\sim	
2 8	Alcaligenaceae; Achromobacter. NCBI TaxID=515:	
2		
R R C	SEQUENCE FROM N.A. STRAIN=31A:	
RX	•95 os	
9 ₽	nickal-achalt-cadming resistance encoded by the rec	
지 2 1	ligenes	
R	Bacteriol. 176:7045-7054(1994).	
ი ი ი ი	COMPONENT OF THE N	
გ	LARITY: HIGH, TO A. EUTROPHUS	
ဂ္ဂ	CZCB.	

```
RESULT 9
CH60_BACHD
ID CH60_BACHD
AC O50305; Q9KFC
DT 30-MAY-2000 (
DT 30-MAY-2000 (
                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                               40
                                                                                                                                                                                                                                  \sqrt{60}
                                                                                                                                                                                                                                                     日
                                                                                                                                                                                                                                                                     Ųγ
                                                                                                                                                                                                                                                                                                        20
                                                                                       δδ
                                                                                                                          SA
SA
                                                                                                                                             뮍
                                                                                                                                                                               몽
                                                                                                                                                                                                                 밁
                                                                                                          멍
                                                                                                                                                                                                                                                                                                                         Query l
Best Lo
Matche
                                                                                                                                                                                                                                                                                                                                                           EMBL; L31363; AAA65105.1; PIR; I39579; I39579.
InterPro; IPR006143; HlyD.
InterPro; IPR005695; Membra
Pfam; PF00529; HlyD; 1.
TIGRFAMs; TIGR00999; 8a010;
Plasmid; Nickel; Cobalt; CaseQUENCE 397 AA; 39933 P
                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation—the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                 Y Match
                                                                                                                                                                              169
                                                                                                                           426
                                                                                                                                                              366
                                                                                                                                                                                                30
                                                                                                                                                                                                                 114
                                                                                                                                                                                                                                  258
                                                                                                                                                                                                                                                                      202
                                                                                                         N
                                                                                                                                            224
                                                                                        Ç.
                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                         4
                                                                       Ø
                                                                                                          \boldsymbol{\omega}
                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                         φ
                                                                                                                                                                                                                                                                                                                          \alpha
                                                                                        \boldsymbol{\varphi}
                                                                                                          Ñ
                                                                                                                                                                                                 Θ
                                                                       N
                                                                                                                                                                                                                                                                                                                           SQ
                                                                                                                                                                                                                                                                                      :| |:|:|
QPSWPMIAG-
                                                                     NLRHRSAPEADIE--EGGISAFSRSETPFQ: | | | :: :| | | :: |:
DANAMSVPEDAVQNLDGRDVVFVRTQQGFR
                                                                                                                                                                                                                                                                                                                          imi
imi
                                                                                                                                                                              KPLTPLISGALSGAMDQVGTKMMDRARG
                                                                                                                                                                                                                                                   GDRMLS
                                                                                                          G)
                                                                                                                                             VTLGAYVAPQAELFRVAGSGAV
                                                                                                                                                     TDS.
                                                                                                          S
                                                                                                          DAT
                                                                                                                           DQTVKLAK-
'C3;
(Rel
(Rel
                                                                                                                                                                                                                                                                                                                           C \vdash
                                                                                                                                                                                                                                                                                                                          larity
Conserva
                                                                                                                                                             ATKAAVSQLSNLVGSVGVF
                                                                                                                                                                                                                  LRIQRKLGDAVRAGD-
                                                                                                                                                                                                                                   VQSR-
                                                                                                      :|
VLANGAPLAGRVQAVTPTVS
                            STANDARD;
39,
39,
                                                                                                                                                                                                                                                                                       VAAAAALVG
                                                                                                                                                                                                                                                                                                                           đ
                                                                                                                                                                                                                                                                                                                          22
22
                                                                                                                                                                                                                           DQLRGGAFVLGMKDKEPKAALSEETDWLDA----
Create
Last
                                                                                                                                                                                                                                                                                                                                 .
ω ω
                                                                                                                                                                                                                                                                                                                                                                     02;
Cadm
                                                                                                                                                                                                                                                                                                                                                                                               rane
                                                                                                                                                                                                                                                                                                                                    op op
                                                                                                                                                                                                                                                                                                                                   50.50
          ed)
                                                                                                                                                                                                                                                                                                                           G
 sequence
                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                         Score 12
Pred. No
9; Misma
                                                                                                                            TVKDMSGEAISST-
                                                                                                                                                                                                                 VLALVDSPEAAAMAA ERKVAQARADLARKTYERESSLFQQ
                                                                                                                                                                                                                                                                                                                                                             o ₹
                                                                                                                                                                                                                                                                                                                                                                                               fus
                                                                                                                                                                                                                                                                                       RT
                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                             AGWTTAGLATDPAVKKAESFIQDKVKSTASSTTSYVA
                                                                                                                                                                                                                                                                                                                                                                                               N
                                                                                                                                                                                                                                                                                                                                                              Ē H
                                                                                                                                                                                                                                                                                                                                   ő
                                                                                                         | | ::|
| GSARAATVVVTPVDANSGLIVGEGVQVRLHTKAA
                                                                                                                                                                                                                                                                                                                                                             ransport.
57CE314996B8
                                                                                                                                                                                                                                                                                                                               1;
update)
                                                                                                                                                                                                                                                                                                                          tches
                            544 AA.
                                                                                        483
                                                                       351
                                                                                                                                                                                                                                                                                                                                           DB 1;
                                                                                                                                                                                                                                                                                                        -DLHYLSTSPDKLHDAMAVSVKRHSP
                                                                                                                                                                                                                                                                                                                          140;
                                                                                                                                            -QVEAYV-
                                                                                                                                                                                                                                                                                                                                            Length 397;
                                                                                                                                                                                                                                                                                                                                                              CRC64;
                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                           102;
                                                                                                                                            -TAADTSRIAA
                                                                                                                            GASLR--STVN
                                                                                                                                                                                                                                   -YKAIKSASYS
                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                            455
                                                                                                          321
                                                                                                                                                                                                 365
                                                                                                                                                                                                                  168
                                                                                                                                                                                                                                  307
                                                                                                                                                                                                                                                     113
                                                                                                                                                                                                                                                                      257
                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                               223
                                                                                                                                                                                                                                                                                                         201
                                                                                                                                             261
                                                                                                                                                              425
                                                                                                                                                                                                                                                                                                                           19;
```

```
TTERRERERERERERESCOCOCOCOCOCOCOCOCOCETERRERERERERERERERERE
                                                                                                                                                                                                                                                                                                                                                                                                                                                           JO3 (Rel. (
JACL OR GROEL OR MO
Bacillus halodurans
OC Bacteria; Firmicutes
OX NCBI_TaxID=86665;
RN [1]
SEQUENCE FROM N.A.
STRAIN=C-125 / JCM 91
X MEDLINE=97141316; Pub
X MCBI_INE=97141316; Pub
X MCBLINE=97141316; Pub
X MCBLINE=97141316; Pub
X MCBLINE=97141316; Pub
X MEDLINE=97141316; Bacillus
inactivated alpha-r'
Biosci. Biotech'
SEQUENCE
STRAIN
"Complete genome sequence of the alkaliphil halodurans and genomic sequence comparison Nucleic Acids Res. 28:4317-4331(2000).

-!- FUNCTION: Prevents misfolding and prome proper assembly of unfolded polypeptide conditions (By similarity).

-!- SUBUNIT: Oligomer of 14 subunits compos 7 subunits (By similarity).

-!- SUBCELLULAR LOCATION: Cytoplasmic (By similarity).

-!- SUBCELLULAR IOCATION: Cytoplasmic (By similarity).

-!- SIMILARITY: Belongs to the chaperonin (By similarity).

-!- SUBCELLULAR LOCATION: Cytoplasmic (By similarity).

-!- SUBCELLULAR LOCATION: Cyt
                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=2(
Takami H.,
Fuji F., I
Horikoshi
                                                                                                                                                                                                                                                                                                                                                                                                                    E FROM N.A.
C-125 / JCM 9153;
=20512582; PubMed=1
H., Nakasone K., Ta
, Hirama C., Nakamu
hi K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           11 (7) (2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   M 9153;
PubMed={
T., Kudo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ig ...
gluc
sut
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PubMed=8987(
., Kudo T.;
and nucleot
                                                                                                                                                                                                                                                                                                                                                                                                                       K., Takaki
Nakamura Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bi C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  > 7 ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ø.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sp. stratesochem. (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             đs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OR CE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ва
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŘΦ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ō
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  st annot
in Confi
BH0562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           r
a
                                                                                                                                                                                                                                                                                                                                                                                                                                   ۲. <del>۱</del> 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ØΛ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ain
by
50:1
                                                                                                                                                                                                                                          ight. It is prof
f Bioinformatic
stitute. There
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                             +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        167.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                        N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            → 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50
                                                                                                                                                                                                                                                                                                                                                                                                                              ogası
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence
7-125 and
recombina
533-1636
                                                                                                                                                                                                        removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gro
                                                                                                                                                                                                                              long
                                                                                                                                                                                                                                                                                                                                                                                                                                   eno
                           ompl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          upda
bEL pi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
binant
                                                                                                                                                                                                                                                                                         nin
                                                                                                                                                                                                                                                                                                               (Ву
                                                                                                                                                                                                                                                                                                                                                                                                        phi
                                                                                                                                                                                                                                                                                                                                                                                               tog
                                                                                                                                                                                                                                                                                                                                                             p d
                                                                                                                                                                                                                                                                                                                                                             mot
       REC
                                                                                                                                                                                                                                                                                                                                                                                                                                   B G
                                                                                                                                                                                                                                                                                                                Ċ
                                                                                                                                                                                                                                                                                                                                                                                                            \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ř
                                                                                                                                                                                                                                                                                       SH)
                                                                                                                                                                                                          D
T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       66
4 but
10 to
                                                                                                                                                                                                                                                                                                                                                                                                           -ب
         ы ы Ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ф
                                                                                                                                                                                                                                                                  oduc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ea
H
                                                                                                                                                                                                                                                      CS
                                                                                                                                                                                                                                                                                                                                                                          03
                                                                                                                                                                                                                                            Φ
                                                                                                                                                                                                                                                                                                                                                                                                H- 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ct
                                                                                                                                                                                                         Usa
Etp:
                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         തെറ
                                                                                                                                                                                                                                                                                                                                                                                                rt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Φ
                                                                                                                                                                                                                                 are
its
                                                                                                                                                                                                                                                                                                                                                                                                                                   asaki
Kuha
      T C C
                                                                                                                                                                                                                                                                                                                1a
                                                                                                                                                                                                                                                                                                                                                              ene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ~ 9 0 €
                                                                                                                                                                                                                                                                                        Q)
                                                                                                                                                                                                                                                                                                                                                                                                Ħ
                                                                                                                                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        र्दित 🔾 🕠
                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacillus
                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                              icte
Bac
                                                                                                                                                                                                           \searrow \omega
                                                                                                                                                                                                                                                                   Ð
                                                                                                                                                                                                                                                                                                                Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ED P- (D
                                                                                                                                                                                                                                                                                                                                                            e refoldi
rated und
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ש ק
ס
                                                                                                                                                                                                                    Φ
                                                                                                                                                                                                                                                                   \mathbf{\alpha}
                                                                                                                                                                                                                                                                                                                ₩-
                                                                                                                                                                                                                                            9
                                                                                                                                                                                                                                 C
                                                                                                                                                                                                                                                                                                               ₹†
                                                                                                                                                                                                                                                                  thr.
                                                                                                                                                                                                                                 onten
                                                                                                                                                                                                                                                                                         an
E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      = # 13
                                                                                                                                                                                                                                                                                                                                                                                               P- 13
                                                                                                                                                                                                                                                                                                                                                                                                                                   Н
                                                                                                                                                                                                                                                       the
                                                                                                                                                                                                                     γd
                                                                                                                                                                                                                                                                                                                                                                                                                                   a A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . F. O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             on
On
                                                                                                                                                                                                          'a
                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                            re
e
                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                       Ø
                                                                                                                                                                                                                                                                                                                                                                                                            Ш
                                                                                                                                                                                                                                                                  Ф
                                                                                                                                                                                                                                                       tha c
                                                                                                                                                                                                                                                                                                                                                                                               subt
                                                                                                                                                                                                                     p
                                                                                                                                                                                                                                                                                                                                                              Ē.
                                                                                                                                                                                                                                                                                                                                                                       ing
                                                                                                                                                                                                                                                                                                                                                                                                                                              Ċ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              f t
                                                                                                                                                                                                                                irict
                                                                                                                                                                                                                                                                                                                                                                                                                                              sui
                                                                                                                                                                                                           sib
                                                                                                                                                                                                                                                                                                                                                                                                            Ç.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             thermally
                                                                                                                                                                                                                     for
                                                                                                                                                                                                                                                                                                                                                                                                           \vdash
                                                                                                                                                                                                                                                                                                                                                                                               lus
ili
                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                              St
                                                                                                                                                                                                                                                                                                                                                                          an
                                                                                                                                                                                                                                            outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                              z
                                                                                                                                                                                                                                            ons
                                                                                                                                                                                                                                                                                                                                                              H
                                                                                                                                                                                                                                                                                                                                                                          ā
                                                                                                                                                                                                                                                                                                                                                              Φ
                                                                                                                                                                                                        n no way
commercial
/announce/
                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                               80
                                                                                                                                                                                                                                                                                                                                        H
                                                                                                                                                                                                                                                                ion
                                                                                                                                                                                                                                            its
```

```
RESULT
HIPR_MO
ID HI
AC QS
DT 10
DT 10
DT 10
                                                                                                                                                                                                                                                                             Qγ
                                                                                           δÃ
                                                                                                                                         밁
                                                                                                                                                       Qy
                                                                                                                                                                      B
                                                                                                                                                                                    QY
                                                                                                                                                                                                    뮍
                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                 뮍
                                                                                                                                                                                                                                               ΛÕ
                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                         QУ
                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                       Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                     SQ
FT
SQ
                                                                                                            뭉
                                                                                                                                                                                                                                                                                                                                                                                      Query |
Best L
Matche
MOUSE
HIPR_MOUSE
Q9JKY5;
16-OCT-2001
16-OCT-2001
16-OCT-2001
Huntingtin i
                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                            Loca
                                                                                                                                                                                                                                                                                                                                                                                                      Ma tch
                                                                                                                         417
                                                                                                                                         346
                                                                                                                                                        35
                                                                                                                                                                                                                   255
                                                                                                                                                                                                                                                               170
                                                                                            4
                                                                                                                                                                                     ω
                                                                                                                                                                                                    N
                                                                                                           2
                                                                                                                                                                                     05
                                                                                                                                                                                                                                 30
                                                                                                                                                                                                                                                98
                                                                                                                                                                                                                                                                               77
                                                                                                                                                                                                                                                                                             1
                                                                                                                                                                                                                                                                                                           N
                                                                                                                                                                                                                                                                                                                           55
                                                                                                                                                                      Q
                                                                                                                                                                                                    \boldsymbol{\sigma}
                                                                                                                                                                                                                                                                                                                                          0/
                                                                                                                                                                                                                                                                                                                                                                        21
                                                                             O
                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                             N
                                                                                                                                                                                                                                                                                                                                                                                       2 4
                                                                             IVE
                                                                                                                          S
                                                                                                                                        RHS
                                                                                                                                                                                                                                                                                                            ENT
                                                                                                            RAAVEEGIVAG
                                                                                                                                                                                                                                                                                                                                                         AKDI KF
                                                                                                                                                                                                                                                                                                                                                                        ASDASLASS
                                                                                                                                                       KLQKMATKNITDSATKAAVSQLSNLVGSVGVFAGWTTAGLATDPAVKKAESFIQDKVKST
                                                                                                                                                                                                                                 EVLPVL-
                                                                                                                                                                                                                                                                                                                                                                                             mi
                                                                                                                                                                                                                                                                                              NPMVIRKGIEKATQVAVEELSKISKP
                                                                                                                                                                                                                                                                                                                           路
                                                                                                                                                                                                     -
                                                                                                                                                                                     YSGAALNAGKRMA-GLPLDVATDGLKAVRSLVSATSLTKNGLALAGG----
                                                                                                                                                                                                                                                                                                                                                                                                                    500
512
544 J
                                                                                                                          S
                                                                                                                                                                                                   FNAVAVKAPGFGDR
                                                                                                                                                                                                                                                                                                                                                                                      Llari
Cons
 (Rel
(Rel
(Rel
                                                                             RLKKEEAG
                                                                                                                                                                                                                                                PALGRQVVDMGIAVQ
                                                                                                                                                                                                                                                                                                                           : []
::ELEDAFI
                                                                                                                                                                                                                                                                                                           FAAASVLQYMQPAINKGDWLAT
                                                                                                                                                                                                                                                                                                                                          DERDAALAHNEQI DALVE
                                                                                                                                                                                                                                                                                                                                                                                                                     ጅ
                                       STANDARD;
                                                                                                                                                                      LTGGEVI
                                                                                                                                                                                                                                                               EESKGFSTELEVVEGMQFDRG
                                                                                                                                                                                                                                                                                                                                                         SEDARRSM-
                                                                                                                                                                                                                                                                                                                                                                                       0 H
                                                                                                                                                                                                                                 EQVVQQGKP I
  40,
40,
                                                                                            B
유
                                                                                                                                                                                                                                                                                                                                                                       SVRSVSTTSCRDLQAITD
                                                                                                                                                                                                                                                                                                                                                                                                                    5 to 5 to 5
                                                                                                                                                                                                                  AGFGDRMLSVQSRDQLRGGAFVLGMKDKEPKAALSEETDWLDAYKAIKSA
                                                                                                                                                                                                                                                                                                                          GGTALVNVIKAVSSIGAEGDEATGVNIVLRALEEPVRQIAHNAGLEGSV
                                                                                                                                                                                                                                                                                                                                                                                                                      720
                                                                             472
                                                                                            4
 Created)
Last sec
Last anr
J proteir
                                                                                           71
                                                                                                                                                                                                                                                                                                                                                                                             ω υ
                                                                                                                                                                       Η,
                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                                      [1]
                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                     9 1
                                                                                                                                                                                                                                                                                                                                                                                                                     w
  otein :
                                                                                                                                                                                                                                                                                                                                                                                             do do
                                                                                                                         VKLAKTVKDMSGEAISSTGA-
                                                                                                                                                                                                                                                                                                                                                                                                                     3
                                                                                                                                                                                                                                                                                                                                                        - LRGVDKLADAVKVTLGPKGRNVVLEKKF---GSPLITNDGVT
                sequenc
                                                                                                                                                                                                                                               FSALNVVRTVLAPALASRPSVQGAVDFGVSTAGGLVAN----
                                                                                                                                                                                                                                                                                                                                                                                     Score 123;
Pred. No. 2
5; Mismatch
                                                                                                                                                                                                                                                                                                                                                                                                                   A -> VP
MISSING
; C769EI
  T a
                                                                                                                                                                                                                                 LIIAEDVEGEALAT-
                                                                                                                                                                                                                                                                                                                                         TRANKLYSEGETPATIAETFAKAEKFDRLATTASSAF
  4
       H- Φ
                                                                                                                                                                                                                                                                                                                                                                                                                   P (IN REF. 1).
G (IN REF. 1).
ED81C903C971 CRC64;
 on update)
lated (Hip1-
                                                                                                                                                                                                                                                                                                                                                                                      natches
               update)
                                                                                                                                                                                                                                                                                            I EGKDSIAQVAAI SSADDEVGKI I AEAMERVGN
                                                                                                                                                                                                                                                                                                           LKPLTPLIS-GALSGAMDQVG---TKMMDRARG
                                                                                                                                                                                                                                                              (ASPYMVT DSDKMEAVLDNPYVLITDKKISNIQ
                                                                                                                                                                                                                                                                            --LHYLSTSPDKLH--
                                                                                                                                                                                                                                                                                                                                                                        (LK----
                                        890
                                                                                                                                                                                                                                                                                                                                                                                            ; DB 1;
2.7;
                                                                                                                                                                                                                                                                                                                                                                                       192;
                                                                                                                                                                                                                                                                                                                                                                       --HHVFAAHRFSVIGSP-
                                                                                                                                                                                                  --RKAMLEDI--
                                                                                                                                                                                                                                                                                                                                                                                                     Length 544;
                                                                                                                        SLRSTVNNLRHRSAPEADI
                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                       180;
                                                                                                                                                                                                                                                                            -DAMAVSVK
                                                                                                                                                                                     ---YAGVS
                                                                                                                                                                                                                                 -LVVNKLR
                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                               229
                                                                                                                                                                                                                                                                             197
                                                                                                            461
                                                                                                                          467
                                                                                                                                                       416
                                                                                                                                                                      345
                                                                                                                                                                                     356
                                                                                                                                                                                                                  304
                                                                                                                                                                                                                                 266
                                                                                                                                                                                                                                               254
                                                                                                                                                                                                                                                                                             169
                                                                                                                                                                                                                                                                                                            176
                                                                                                                                                                                                                                                                                                                           110
                                                                                                                                                                                                                                                                                                                                                         54
                                                                                                                                        401
                                                                                                                                                                                                   290
                                                                                                                                                                                                                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                                                                        65
```

Φ

related)

```
Query
Best 1
                                                      EMBL; AF221713; AAF34662.1; -.

MGD; MGI:1352504; Hiplr.

GO; GO:0005905; C:coated pit; IDA
GO; GO:0005856; C:cytoskeleton; I
GO; GO:0003779; F:actin binding a
GO; GO:0006898; P:receptor mediat
InterPro; IPR001026; ENTH.
InterPro; IPR002558; ILWEQ.
Pfam; PF01608; I_LWEQ; 1.
ProDom; PD011820; ILWEQ; 1.
SMART; SM00273; ENTH; 1.
SMART; SM00307; ILWEQ; 1.
Actin-binding; Coiled coil.
DOMAIN
                                                                                                                                                                                                                                                                                                                           An actin-binding present the family is a novel of the cold binding process.
                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A TISSUE=Brain; MEDLINE=20082888; Engqvist-Goldstei
                                                                                                                                                                                                                                                                                                                                                                              HIPIR.
Mus musc
Eukaryot
Mammalia
NCBI_Tax
[1]
SEQUENCE
TISSUE=E
                                                                                                                                                                                    modified a entities
                       DOMAIN
                                     DOMAIN
DOMAIN
                                                     Actin-1
                                                                                                                                                                                                           the
                                                                                                                                                                                                                  between
                                                                                                                                                                                                                                                                        <del>-</del>
                                                                                                                                                                                                                                      LINK THE ENDOCYTIC MACHINERY TO THE
SUBUNIT: INTERACTS WITH ACTIN AND HU
(HIP1). DOES NOT INTERACT WITH HUNTI
SUBCELLULAR LOCATION: CYTOPLASMIC. M
MAINLY LOCALIZED AT THE ENDOCYTIC CO
PERINUCLEAR REGION.
TISSUE SPECIFICITY: WIDELY EXPRESSED
SKELETAL MUSCLE AND HEART. THE LEVEL
APPRECIABLY DURING DEVELOPMENT.
DOMAIN: THE TALIN-LIKE DOMAIN BINDS
SIMILARITY: BELONGS TO THE SLA2 FAMI
                                                                                                                                                                                                                                          1 1
                                                                                                                                                                           is SWISS-PROT entry is copyright. It is produce tween the Swiss Institute of Bioinformatics e European Bioinformatics Institute. There de by non-profit institutions as long as dified and this statement is not removed. Ustities requires a license agreement (See https://doi.org/10.1016/j.ch.).
                                                                                                                                                                                                                                                                                                                           FUNCTION:
                                                                                                                                                                                                                                                                                                                                                                                                                             musculus
                                                                                                                                                                                                                                                                                                                                                                                                       lia; E
TaxID=
                                                                                                                                                                                                                                                                                                                                                                                                             yot
                                                                                                                                                                                                                                                                                                                                                                                                                     þ
                                                                                                                                                                                                                                                                                                                                                                                                      ; Metazoa;
Eutheria;
D=10090;
                                                                                                                                                                                                                                                                                                                          novel component
ol. 147:1503-1518(
on: COMPONENT OF C
                      19;
77
311
346
800
                                                                                                                                                                                                                                                                                                                                                                                                                             (Mouse
                                                                                                                                                                                                                                                                                                                                                                                        \Rightarrow
                                                                                                                                                                                                                                                                                                                                                                  p. ..
                       ጅ
                                                                                                                                                                                                                                                                                                                                                                PubMed=:
                                                                                                                                                                                                                                                                                                                                                                                                               ** **
                            80
316
644
1068
                                                                                                                                                                                                                                                                                                                                                                                                               Chordata
Rodentia
                                                                                                                                                                                                                                                                                                    IC MACHINERY TO THE ACTINTS WITH ACTIN AND HUNTINGT INTERACT WITH HUNTINGTIN
                              0 4 0
                       -
                                                                                                                                                                                                                                                                                                                                                  ein
 N 5
                       -
                                                                                                                                                                                                                                                        WIDELY EXPRESSED.
) HEART. THE LEVEL COEVELOPMENT.
                       948
 08
78
                                                                                                                                                                                                                                                                                                                                                                ,10
                       4
                                                                                                                        it; IDA.
eton; IDA.
nding acti
mediated
                                                                                                                                                                                                                                                                                                                                                                 )613908
Kessel:
                                                                                                                                                                                                                                                                                                                            CLATHRIN-
                                                                                                                                                                                                                                                                                                                                    1
                                                                                                                                                                                                                                                                                                                                                                                                               D) D)
                                                                                                                                                                                                                                                                                                                                  f the Sla2/Hur of clathrin-c (1999).
                                                                                                                                                                                                                                                                                                                                                                                                               20.20
                      POLY-SER.
POLY-GLU.
COILED COI
TALIN-LIKE
YW; 97CEES
Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                               Craniata;
Sciurogna
                                                                                                                                                                                                                                                                                                                                                                  (a >-
                                                                                                                  4.
tivity; IDA.
d endocytosi:
                                                                                                                                                                                                                                                                                                                                                                 ጁ
                                                                                                                                                                                                                                                 INDS
                                                                                                                                                                                                                                       FAMILY
                                                                                                                                                                                                                                                                                                                           COATE
                                                                                                                                                                                                                                                                                     COMPARTMENTS
                                                                                                                                                                                                                                                                                                                                                                 Ξ.
                                                                                                                                                                                                                                                                                                                                                 /Hunt
                              쯦
                       9D9
                                                                                                                                                                                                                                                                                                                                                                                                              5
 7 5
                                                                                                                                                                                                                                                                                                                                                                                                              Ver
                                                                                                                                                                                                                                                                                                                                           coat
                                                                                                                                                                                                                                                   ال.
                                                                                                                                                                                                                                                                OF EXPRES
                                                                                                                                                                                                                                                                                                                                                                Chopr
                                                                                                                                                                                                                                                                                                                           D
                       2CDF5
                                                                                                                                                                                                                                                                                                                                           ingt:
                                                                                                                                                                                                                                                  ACT
                                       POTENT
                                                                                                                                                                                                                                                                                                                                                                                                               Murid
                                                                                                                                                                                                                          oduced
                                                                                                                                                                                                                                                                                                                            IT
                                                                                                                                                                                    Usage by
                                                                                                                                                                                                                                                  Z
                                                                                                                                                                                                                                                                                      TS AND VESICI
CYTOSKELETON
TIN INTERACTI
(BY SIMILARI
NE-ASSOCIATED
MENTS AND IN
                       DB1
                                                                                                                         W
                                                                                                                                                                                                           are
                                                                                                                                                                                                                                                                                                                                                   μ.
                                                                                                                                                                                                                                                                                                                                                                 D
                                                                                                                                                                                                                                                                                                                                          ţġ.
                                                                                                                                                                                                    ts
                                                                                                                                                                                                                                                                                                                                                  \supset
                                                                                                                                                                                                                   and
                                                                                                                                                                                                                                                                SS
                                                                                                                                                                                                                                                                                                                                           in
                                                                                                                         IDA
                                                                                                                                                                                                                                                                                                                                                                                                               do do
                                                                                                                                                                                                           OU.
                                                                                                                                                                                                    O
                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                               Φ
                       CRC64
                                                                                                                                                                                                                           throu
                                                                                                                                                                                                    onten
                                                                                                                                                                                                                                                                AT
                                                                                                                                                                                                                                                                                                                                                    đ
                                                                                                                                                                                                                                                                                                                                                                                                               **
                                                                                                                                                                                                                   the
                                                                                                                                                                                             Λq
                                                                                                                                                                                                                                                                                                                                           Ø
                                                                                                                                                                                                                                                                                                                                                 Φ
                                                                                                                                                                                                                                                                                                                                          nd .
                                                                                                                                                                                                                                                                                                                                                                Нау
                                                                                                                                                                                                           re
                                                                                                                                                                                                                                                                 82
                                                                                                                                                                                      CO
                                                                                                                                                                                                                                                                                                                                                                                                                H O
                       *
                                                                                                                                                                                     D
                                                                                                                                                                                                                           Ġ
                                                                                                                                                                                            Ø
                                                                                                                                                                                                                                                                                                                                                  CT
                                                                                                                                                                                                     trict
                                                                                                                                                                                                                   EMBL
                                                                                                                                                                                                                                                                 WER
ES
                                                                                                                                                                                                                                                                                                      ING
                                                                                                                                                                                                                                                                                                                                           ing
                                                                                                                                                                                                                                                                                                                            LES
                                                                                                                                                                                                                                                                                                                                                                  den
                                                                                                                                                                                             pa
                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                       THE
        980
                                                                                                                                                                                                                                                                                                                                                                                                                     Ö
                                                                                                                                                                                                                                                                                                                                                                                                               Φ
                                                                                                                                                                                                                                                                 NOT CHANGE
                                                                                                                                                                                                                                                                                                                                                                                                               tomi;
Mus
                                                                                                                                                                                             for
                                                                                                                                                                                                                                                                                                              PROT
                                                                                                                                                                                                                                                                                                                                           prot
                                                                                                                                                                                                                                                                                                                                                                 3
                                                                                                                                                                                                                          collaboration
                                                                                                                                                                                                          outstation tions on it
                                                                                                                                                                                                                                                                                                                            THAT
                                                                                                                                                                                      ch/
                                                                                                                                                                                                                                                                                                                                                                  ᄬ
                                                                                                                                                                                    in no way
commercial
n/announce/
                                                                                                                                                                                                                                                                                                                                           ein;
                                                                                                                                                                                                                                                                                                                             YAM
                                                                                                                                                                                                    00
00
                                                                                                                                                                                                            its
```

Local

S

imilar

ity

Z O

 $\boldsymbol{\omega}$

```
RESIDER OF SECONDS OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΛÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ĄΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Λõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뭉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              당
     RR R R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SULT 11
96_YEAST
YM96_
                                                                                                                                                    Q04893;

Q1-NOV-1997 (Rel. 3

Q1-NOV-1997 (Rel. 3

Q1-NOV-1997 (Rel. 3

Q1-NOV-1997 (Rel. 3

Q1-NOV-1997 (Rel. 4

Q1-NOV-1997 (Rel. 3

 [1]
SEQUENCE FROM N.
STRAIN=S288c / A
PubMed=9169872;
Bowman S., Churc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YEAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EQLAVLRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ALDSVS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MKMEEQSDQLEKLKRELAARAGELARAQEAL-SRTEQSGSELSSRLDTLN--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VIGSPDERDAALAH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TASSTTSYVADQTVK-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EGLI SASKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LEVNERI-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LNAGKRMAGLPLDVATDGLKAVRSLV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AMDQVGTKMMDRARGDLHYLSTSPDKLHDAMAVSVKRHSPALGRQVVDMGIAVQTFS---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DRLATTASSAF ENTPFAAASVLQYMQPAINKGDWLATPLKPL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         || :| :| | | | | | :|| : |
ADRLMDTCRECGARALELVGQLQDQTVLRRAQPSLMRAPLQGILQLGQDL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GDRMLSVQSRDQLRGGAFVLGMKDKEPKAALSEETDWLDAYKAIKSA--
                                                                                                                                                                                                                                                                              7 (Rel. 35, C
7 (Rel. 35, I
3 (Rel. 42, I
al 113.1 kDa
YM9924.09.
    Churcher
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KPKSLDVRQEELG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SATKAAVSQLSNLVGSVGVFAGWT
                                                                                                                                                                                                                                                           cerevisiae
                                                            N.A.
AB9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AQQPPGVAMES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                            Ascomycota; Sacchar; Saccharomycetaceae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GLEQGHTQYLAS
     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LNSCTDLMKAIRLLVMT
    3
                                                                                                                                                                                                                                                                                                                    Created)
Last sequ
Last anno
a protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ||| :| |::| |
AAAEAEAILQDAVSKLD--
                                                                                                                                                                                                                                                           (Baker's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FRTASDASLAS
     Badcock
                                                                                                                                                                                                                                                                                                                       sequence
annotati
tein in I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          74;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -NEQIDALVETRANRLYSEGETPATIAETFAKAEKF-
                                                                                                                                                                                                                         er's yeast).
Saccharomyc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AMVDKE-MAATSAAIE--DAVRRIEDMMSQARHESSGVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEDA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mi sma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VGWGATQL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RTVLAPALAS -- RPSVQGAVDFGVSTAGGLVANAG
                                                                                                                                                                                                                                                                                                                       e update)
ion update)
PRE5-FET4 intergenic
     ㅈ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SATSLTKNGLALAGGYAGVSKLQKMATKNI--T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LAKTVKDMSGEAISST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STSLQKE---IVESGRGAATQQEFYAKNSRWT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SALVAALTRESHLAADTIVN-GAATSHLAPTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SSVRSVSTTSCRDLQAITDYLKHHVFAAHRFS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGLATDPAVKKAESFIQDKVK---
                                                                                                                                                                                            omycotina; Saccl; Saccharomyces
     Brown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             178;
D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               || :| |:| |
----DPLHLRCTSSPDYLVSRA-QA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -VESADKVVLHMGKYEELIVCSHE
                                                                                                                                                                                                                            Saccharomycetes;
Chillingworth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       953
                                                                                                                                                                                                                                                                                                                           region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -TP--LISGALSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              --AEKEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -SYSGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 367
```

29;

20 밁 Ş 80 밁 80 40 Ş 밁 QV QV 밁 5 日 9 유 Query Ma Best Loc Matches EMBL; Z54141; SGD; S0004936; Hypothetical p SEQUENCE 114 modified entities or send a Connor Nature This use the between 10 Loc MA Jor R., Dedman K., 15 K., Lye G., Mc P., Skelton J., nucleotide seque DOMAIN European bу -SSIWS 203 Ø 557 498 380 107 260 335 242 438 N 118 118 128 54 96 12 85 80 5 N 387:90the Swiss Institute of Bioinformatics Institute.

opean Bioinformatics Institute.

non-profit institutions as lod and this statement institutions as log remainstitutions. requires an email t GVAMES VSSEAPS GSAVTSVGTTSDASKEVFSSSTSDV SA : imi LISGALSGAMDQVGTKMMDRARGDLHYLSTSP DERDAALAHNEQI DALVETRANRLY S D KAALS ISSV ISA; TGYNS' SAT KFDRLATTASSAFENTPFAAASVLQYMQPAINKGDWLA-: :||:|| | | | :||: |: |: : : SSEISSTTSSSVSSEAPLATSSVVSSEAPSSTSSSVSSE 11 protein, SE ଦ୍ 90-93(1997) CONTAINS MJ \circ ar SLTAS ons CAA90835.1; ; YMR317W. Ą S EAPSAISSLASSRLFSSKNT [4] ₩. FRTASDAS-SS TVSTTTS sequence Ţ ATSSSVSSEASSSTSSSVSS Φ a license agreement to license@isb-sib.c Н K., Devlin, Moule S., J., Walsh S. |:||| | ETTNESNLATSSTSLLSNKATARSLSTSNATS TSSSVSSEAPSSTSSSVS Va ש TAGGLVANAGFGDRMLSVQS ЦP VDMGIAVQTFSALN-CT. Repeat 113070 MANY سر ،نغ S 40 SWS ဖွ ပ -AASSTLGSKVSSSNSRMATS .00 . ₩LD of. DIT LASSSVRSV S 50.50 84; ER/THR-SATSLTKNGLAL MW; ທ • ີ S K., Gentles S., Hamlin N., Ho Odell C., Pearson D., Rajando , Whitehead S., Barrell B.G., Raccharomyces cerevisiae chron Pr S SEASSISSNLAS n ed. 0 **AYKAIKSASY** ore 120.5; ed. No. 9.0 Mismatcher 0 as long RICH oinformatics and S S S 120. No. -WRTVLA-removed | |::| ||SVTSTLVATE S S |:|| ch) EAP 3EBCA2 SEAP (See ST 77 LATS DOMAIN The TSC SSAPS Ü $\boldsymbol{\omega}$ S SGAALINAGKRMAGLP DKLHDAMAVS 4FE5 ~ • ຜ http: 8 8 KIS DB ь-Э סי RDLQAITDYLKHHV SSSVSSE SVSSE SSW S 0 23 S Usag AND ::: | are its w -4 SYTS EGETPAT STSSDLSKSSV \sim •• ~ . and EAP \sim Φ DQLRGGAF REP o conten O S S through ndel LRP S RC S ISSTKS IA-KRHS טי 9 isb AGG SSE SS 5 S 4 Ø Ø H ct (II D S 'I FGNSS' DVAT! PALG TEMBI YAGVSKLQKMAT IVTKTKNSVVS VLGMKD TLASNS SVMSSEVS 'AAHRF sib eam **ω** … н **S**t. LS: 61; S 4 S öme Ö EAP for rt O : APSS $\boldsymbol{\mathsf{H}}$ ŖР 80 collaborat outstatic **DGLKAVRS** Z ISI ש :::: ä TVTTS LATS LKPLT SVIGS SVQGAV ETFAKA \succ Gaps commerc TSS SATS Н announce S no S S ď A P Ъ J S Ø • • tion 9 106 67 363 616 556 437 207 37 334 497 241 way cial S S Ŭί Œ \vdash N ct 9 9 σ .

```
OCC OCC DIT DICE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50
            SULT 1:
                                                                                                                                                                                                                                                                                                                                                                                      YEAST

MSB2_YEAST STANI
P32334;

01-OCT-1993 (Rel. 2'
01-NOV-1997 (Rel. 2'
01-NOV-1997 (Rel. 2'
01-NOV-1997 (Rel. 3'
MSB2 protein (Multice
MSB2 protein (Multice
MSB2 OR YGR014W.

Saccharomyces cerev:
Eukaryota; Fungi; A:
Saccharomycetales; 'A:
Saccharo
                                                                                                                                                                                                                                               Rieger M., Brueckner I
"Sequence analysis of
chromosome VII.";
Yeast 13:1077-1090(19:
-!- PTM: O-GLYCOSYLAT:
-!- SIMILARITY: SOME,
                                                                                                                                                                                                                                                                                                 defect.";
Yeast 8:3
[2]
[2]
SEQUENCE
SEQUENCE
STRAIN=S2
MEDLINE=9
Rieger M.
"Sequence
                                                                                                                                        modi
enti
or s
                     bet;
the
                                                                                                                                                                                  esn
                                                                                                                                                                                                                        Thi
                                                                                                                       between the Swiss Institute of Bioinf the European Bioinformatics Institute. use by non-profit institutions as 1 modified and this statement is not rementities requires a license agreement or send an email to license@isb-sib.ch
         L; M77354; AAA34798.
L; Z72799; CAA96997.
L; S25370; S25370.
GO:0003246; MSB2.
GO:0005034; F:osmos
GO:0000283; P:estab
GO:0006970; P:respo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 409
                                                                                                                                                                                                                                                                                                                           E FROM N.A.
3288c;
=97435481;
                                                                                                                                                                                                                                                                                                                                                                               315-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SNNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IQDKVKSTAS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KNITDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \mathbf{S}\mathbf{T}
                                                                                                                                                                                                                                                                                                                                                                                ω
; C:integral to pa
; F:osmosensor act
; P:establishment
; P:response to os
Glycoprotein; Rep
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SASLAIN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        :
ARP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AT KAAVSQLSNLVGSVGVF
                                                                                                                                                                                                                                                                                                                                                                               (199
                                                                                                                                                                                                                                                                                                                                                                                                        gle J
mult:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               evisiae
                                                                                                                                                                                                                                                                                                                                                                                                        PubMed=1
e J.R.;
ulticopy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27
27
35
                                                                                                                                                                                                                                                                         (19
                                                                                                                                                                                                                                                                                                                              PubMed=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ascomycota; S
Saccharomyce
                                                                                                                                                                                                                                                                                                                                                                               N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          שי
                                                                                                                                                                                                                                                                                                 Ħ́z.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STTSYVADQTVKLAKTVKDMSGEAISSTGASLRSTVNNLRHRSAP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       · 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -
                                                                                                                                                                                                                                                               3E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Las
Las
                                                                                                                                                                                                                                                  TO
                                                                                                                                                                                                                                                               97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C
                                                                                                                                                                                                                                                                                                      N
                                                                                                                                                                                                                                                                                                     03
                                                                                                        \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        suppr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ∽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (D)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sated)
st sequence
st annotati
                                                                                                                                                                                                                                                                                                                =92902;
Schae:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          :\
                                                                                                                                                                                                                                                  ¥ Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Baker's
                                                                                                                                                                                                                                                                                                     icha
kil
                                                                                                                                                                                                                                                                                                                                                                                                         suppress
                                                                                                                                                                                                                                                                                                                                                                                                                                   Çī
                                                                                                                                                                                                                                                 ATH
AS
                                                                                                                                                                                                                                                                                                                                                                                                                                   \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                   4
                                                                                                                                                                                                                                                                                                                                                                                                                                   32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ∽
                                                                                                                                                                                                                                                   H [7
                                                                                                                                                                                                                                                                                                               12
fe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       et
                                                                                                                                                                                                                                                 SER/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  accha
                                                                                                                                                                                                                                                                                                      ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RT
                                                  lası
                                                                                                                                                                                                                                                                                                                                                                                                                                   Θ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    : I I
                                      0f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       о
С
                                                                                                                                                                                                                                                                                                      G H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50
                                                                                                                                                                          . It is produced through a collaboration oinformatics and the EMBL outstation ute. There are no restrictions on its as long as its content is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               yea
                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           □ -- •
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       e
D
                                                   ₩. 🖽
                                                                                                                                                                                                                                                                                                      Ċ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                      THR-RICH REGIONS (PROBABLE)
                       H- Ω
                                                                                                                                                                                                                                                                                                                                                                                                         н
                                                   CT D
                                                                                                                                                                         e.
s long
                        ty; IMP
cell pol
                                                                                                                                        removed.
nt (See )
.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       n update)
of a budding defect
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                st).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  omycotina;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          306 AA.
                                                                membrane;
                          ll polarity (stress; IMP.
                                                                                                                                                                                                                                                                                                   Mueller-Auer S.;
om Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                          cdc24 bud emergence
                                                                                                                                                        . Usage by and http://www.isb-si
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTAGLAT DPAVKKAES-
                                                                 IMP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Saccharomycetes;
                                    (sensu
                                                                                                                                                                                                                                                                                                      cerevisiae
                                       Sacch.
                                                                                                                                                          sib
                                                                                                                                                                     for
                                                                                                                                                         in no way or commercial .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     408
```

	DIEEGGISAFSRSETPFQL 484 	466 642	B 6
641	ATSTSAVLASSSVSTTSPYTTAGGASTEASSLISSTSAETSQVSYSQSTTALQTSSFASS	582	片
46	ASSTTSYVADQTVKLAKTVKDMSGEAISSTGASLRSTVNNLRHRSAPEA	417	Qy
581	SSTIVYSSSTGSSEESAASTASATLSGSSSTYMAGNLQSQPPSTSSLLSESQ	530	Dβ
416	TKNITDSATKAAVSQLS-NLVGSVGVFAGWTTAGLATDPAVKKAESFIQDKVKST	363	94
529	LSASEQASTSSSFSVVSPSVSFVPSQSSSDVASTSAPSVVSSSFSYTSLQAGGSSMTNPS	470	Дb
367	DVATDGLKAVRSLVSATSLTKNGLALAGGYAGVSKLQKMA	323	Qy
469	FQSSTEVYGASASSTMSSLLSTTSLQSTTLDSSSLASSSASSSDLTDYGVSSTASIPL	412	Дb
322	VQSRDQLRGGAFVLGMKDKEPKAALSEETDWLDAYKAIKSASYSGAALNAG-KRMAGLPL	264	8
41]	NSFSIVSPSVSFVPS-QSSSDVASSSTANVVSSS-FSDIPPQTSTSGSVVSVAQSASALA	354	D
263	VLAPALASRPSVQGAVDFGVS	226	Qy
350	SSASPVVSMSAAGQIASSSSTDNPTMSETFSLTSTEVDGSDVSSTVSALLSAPFLQTSTS	294	B
225	LHDAMAVSVKRHSPALGRQVVDMGIAVQTFSALAVVVRT	188	Qy
29	SEILVQSSADFSSPSSPTTTDISLSAAPLQTSESSSFTTASAALPVSSTDVDG	241	D
18	SVLQYMQPAINKGDWLATPLKPLTPLISGALSGAMDQVG-TKMMDRARGDLHYLSTSPDK	129	Qy
240	TPLISTSTMSAADNVFSSANPISASLTTTDSSESFDQTSTAGAIPVQSSADFSSS	186	망
128	AALAHNEQIDALVET	70	Qy
185	AASSVNAAS	142	В
69	AMESFRTASDASLASSSVRSVSTTSCRDLQAITDYLKHHVFAAHRFSVIGSPDERD	14	Qy
<u>5</u>	5.0%; Score 120; DB 1; Length 1306; 1 Similarity 20.2%; Pred. No. 12; 117; Conservative 79; Mismatches 235; Indels 148; Gaps	Query Match Best Local Matches 11	7 m O
	1306 AA;	SEQUENCE	98
	00 816	REPEAT	대) ^다 다) +
	782 5 799 6	REPEAT	ก ฯ) -1 +-)
	49 765	REPEAT	F
	715 731 2. 732 748 3	REPEAT	บ -1 +-1
	698 816 7 X 17 AA TANDEM REPEATS. 698 714 1.	REPEAT	ण प भी भी
	ole 7 v 17 h manner	7213 711	1 3

RESULT 13 HLYA_SERMA

```
42
STTEGSETSSQGFSTSSVLVQMPSSISSEFSPSQTTTQM 680
                                                                                                                                           53
                                                                     29
                                                                                             69
                                                                                                                                                      25
                                                                                                                                                                  3
                                                                                                                                                                              37
                                                                                                                                                                                         0
                                                                                                                                                                                                     8
                                                                                                                                                                                                                                        24;
                                                                                                        N
                                                                                                                               ω
                                                                                                                                                                                                                \ddot{\mathbf{S}}
                                                         Φ
                                                                                                                   -
```

```
δõ
                                                                                                                                                                                          밁
                                                                                       Вþ
                                                                                                              70
                                                                                                                                      Query Ma
Best Lox
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HLYA_SERMA STANI
P15320;
01-APR-1990 (Rel. 1001-APR-1990 (Rel. 1001-NOV-1990 (Rel. 100
                                                                                                                                                                                                                                                                                                                             This SWISS-PROBE the European I
                                                                                                                                                                                         EMBL; M2261
PIR; A28182
Hemolysis;
SIGNAL
CHAIN
SEQUENCE
                                                                                                                                                                                                                                                                      use by modified entities or send a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mar
                                                                                                                                                                                                                                                                                                                                                                                 arcescens.";
Bacteriol. 170:3177-3188(1988).
FUNCTION: BACTERIAL HEMOLYSING CELL MEMBRANES AND CAUSE CELL DEFINED.
FUNCTION: CELL-BOUND HEMOLYSIN ERYTHROCYTES BY INTERACTION WINEQUIRES SHLB FUNCTION.
SUBCELLULAR LOCATION: Outer meter similarity: To P.MIRABILIS HEN
                                                                                                                                                  Loc
                                                                                                                                                                Match
                                     759
                                                                                                                                                    Ø
                                                              89
                                                                                       80
                                                                                                                                        12
                                                                                                                Θ
                                                                                                                                                                                                                                                                                an
                                                                                                                                          0 0
                                                                                                                                                                                                                                                                               requires a
an email to
                                    GDASVS
                                                                                      QYRAGLRI
                                                                                                      QQPP
                                                                                                                                                                                                                                                                                                         non-
                                                                                                                                       imi
);
                                                              RDAALAHN
                                                                                                                                                                                                                                              18;
                                                                                                                                                                                                                                                                                                                                                             -PROT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      char.
                                                                                                                                                                                                                               70xin;
                                                                                                                                        lari
Cons
                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                           ROT entry is copyright. It is produced through a collaboration Swiss Institute of Bioinformatics and the EMBL outstation - Bioinformatics Institute. There are no restrictions on its - profit institutions as long as its content is in no way this statement is not removed. Usage by and for commercial sires a license agreement (See http://www.isb-sib.ch/announce/nail to license@isb-sib.ch).
                                                                                                                                                                                          1
31
08
                                                                                                                GVAMES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                037; Pub
lebel E
aracteri
                                                                                                                                                                                                                                                          AAA5
                                       2
SVLQYMQPAINKG
                                                                                                                                                                                            ⋛
                                                                                                                                         Œ
                                                                                                                                                    ct
                                                                                       EHT -
                                                                                                                                                                                                                                              Θ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ANDAR
                                                                                                                                                                                                      32.
Out
30
                                                                                                                                                                                                                                                          0323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         · 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            йррр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'ubMed=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       949
                                                                                                                П
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ct
                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AND
                                                                                        RD
D
                                                                                                               27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  μ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 , Br
                                                                                                                                         14. V
                                                                                                                                                                                            -\infty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cre
Las
Las
                                                              LVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ç
                                                                                        (Z) **
                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                              -3188(1988).
L HEMOLYSINS
CAUSE CELL F
                                                                                        (T)
                                                                                                                                         Φ
                                                                                                                                                                                             (J)
                                                                                                                                                    . .
                                                                                        Ä
                                                                                                                                                    5
                                                                                                                                                                                                                                                          5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ρ 😽
                                                                                                              DASLASSSVRSVSTTSCRDLQAITDYLKHHVFAAHRFSVIGSPDE
                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                329(
aun
on (
                                                                                                                                                                                            78
                                                                                                                                                                                                                                 emb
                                                                                                                                                    do do
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         \Box
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 4 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gamma
ia.
                                     ₹VS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ted
                                                              RANRLY
                                                                                                                                                    Se Se
                                                                                       RTENSAS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       seque
annot
                                                                                                                                                                                         ¥¥;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                        Θ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                           HEMOLYSI
                                                                                                                                                                Score
                                                                                                                                                    Pred.
                                                                                                                                                                                                                                 ane
                                        T.
                                                                                                                                       50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ™ <
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                    r membrane.
HEMOLYSIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ct **
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ס
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CT D
                                                                                                                                                                                                                                                                                                                                                                                                                          WITH WITH
                                                              SEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nc
at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  he
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                      9 119.5;
. No. 17;
ismatches
                                                                                       <u>ა</u> —
                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ARE EXOTOXINS THAT ATTACK BLOOD RUPTURE BY MECHANISMS NOT CLEARLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ĊŤ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         H- @
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
ion update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hemolysin determinant of
                                                                                        •• [1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Œ
                                                                                                                                                                                                                               gnal.
                                                                                                                                                                                                                                                                                                                                                                                                                          WHICH RELEASES HEME-IRON FROM
THE ERYTHROCYTE MEMBRANE. SHI
                                                                                                                                                                                                        ÏN.
                                                                                      SGGSVK-LKAEKDV----TFSGSKLVA----DK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     obacteria;
                                                                                                                                                                                          9B476FE7DAD51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31 - 40.
PLTPLISGALSGAMDQVGTKMMDRARGDLHY--
                                    PASNT EQT KI GGGFYYTGGI DKLGSGVEAGYEN
                                                              PATIAET-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A.
                                                                                                                                                                                                                                                                                                                                                                                   (HPMA).
                                                                                                                                                                DB 1;
                                                                                                                                      242;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Enterobacteriales;
                                                             FAKAEKFDRLATTASSAFEN
                                                                                                                                                                                          CRC64;
                                                                                                                                                                Length
                                                                                                                                        Indels
                                                                                                                                                                 1608;
                                                                                                                                       155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Serratia
                                                                                                                                                                                                                                                                                                                                                                                                                           SHLA
                                                                                                                                       Gaps
                                    809
                                                             122
                                                                                       758
```

F	RT	R	RX	RC :	R R	RL :	₽?	2 R	R	۶ <u>۲</u>	38	80	ရှ မှ 2	ᄗ	DT	DT A	DI	RESULT HS7F C		O D	QУ	Db	80	용	Qy	문	γ	D	Qy	B	Qy	당	Qy	g
DNA 8:233-243(1989).	gans.";	Heschl M.F.P., Baillie D.L.; "Characterization of the hsp70 multiqene family of Caenorhabditis	E=89356251; PubMed=27	TRAIN=Bristol N2;	(2) SECTION OF 1-487 FROM N.A.	d (FEB-1997)	., Gillam B.	ENCE F	1)	239;	Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;	enorhabditis elegans.	Heat snock /v kpa protein r, mitochondrial predursor. HSP-6 OR HSP70F OR C37H5.8.	UL-1999 (Rel. 38, Last annotation updat	JUL-1998 (Rel. 36, Last sequence up	1; P91135; L-1989 (Rel. 11	F_CAEEL	CAEEL CAEEL	1	1204 GAFDIAKVNESATERQGATIASDGKVTLSANGKGDDALHLQ 1244	ASLRSTVNNLRHRSAPEADIEEGGISAFSRSETPFQL	1157 LSAGNKVALQAAESTQTRKESKLSGNIDLGAGSSDSKEKTGGNLSAG 1203	QDKVKSTASSTTSYVADQTVKLA	1104 NFGAGFGGGTHNGESSSSTAQVGNISGQQGVELKAGRDLTLQGTDVKSQGDVS 1156	VSKLQKMATKNITDSA	TALNGGRGKTAVNAGGDIRLDQAS	302KSASYSGAALNAGKRMAGLPLDVATDGLKAVRSLVSATSLTKNGLA 347	984 AANRQDEQSRDTRGSAGVRVYTTTGSDLTVDAKGEGGTQRSNSSASQAVTGSIDAANGIN 1043	270LRGGAFVLGMKDKEPKAALSEETDWLDAYKAI- 301	924 IGAQGGSSEKRSSSSQAVVSSVQAGSIDINAKGEVRDQGTQYQASKGAVNLTADSHRSEA 983	GGLVAI	864 ADTASTTTTKTDVGVNIGANVDYSAVTRPVERAVGKAAKLDATGVINDIGGIGAPNVGLD 923	181LSTSPDKLHDAMAVSVKRHSPALGRQVVDMGIAVQTFSALNVVRTVLAPALASR 234	810 NKTQAQSSKAITSGSDVKGNLTINARDKLTQQGAQHSVGGAYQENAAGVDHLAA 863

```
QΥ
                                                                                                                                                γQ
               δÃ
                                                                                δÃ
                                                50
                                                                 밁
                                                                                                  뭉
                                                                                                                                 밁
                                 뭉
                                                                                                                                                                Query I
Best Lo
Matche
                                                                                                                                                                                             EMBL; U88315; AAB42371.1; -
EMBL; X07678; CAA30525.1; -
PIR; B32475; B32475.

PIR; T25613; T25613.

HSSP; P04475; 1DG4.

WormPep; C37H5.8; CE08631.

InterPro; IPR001023; Hsp70; 1.
PRINTS; PR00301; HEATSHOCK7
PRODom; PD000089; Hsp70 1;
PROSITE; PS00329; HSP70 1;
PROSITE; PS01036; HSP70 2;
PROSITE; PS01036; HSP70 3;
ATP-binding; Heat shock; MuTransit peptide.
TRANSIT 1 27
CHAIN 28 657
CONFLICT 138 138
CONFLICT 140 140
CONFLICT 347 348
SEQUENCE 657 AA; 70844 M
                                                                                                                                                                                                                                                                                                                                                                                        use by modified entities or send a
                                                                                                                                                                                                                                                                                                                                                                                                                          between
the Euro
                                                                                                                                                                 set
o_1
                                                                                                                                                                                                                                                                                                                                                                                                        s SWISS-PROT entry is copyr: ween the Swiss Institute of European Bioinformatics Indianatics Indianatics institution of the statement is
                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR
SIMILARITY:
                                                                                                                                                                                tch
                                162
                                                 183
                                                                 111
                                                                                                                                                                         ĝ
 205
                                                                                13
                N
                                                                                                                                                                 10
                                                                                                 Ç
                                                                                                                 68
                42
                                                                                 Œ
                                                                                                  CD.
                                                                                                                                 9
                                                                                                                                                 9
                                                                                                                                                                Simi
)7;
                                                                                                                                                                                                                                                                                                                                                                                         an
                                                                                                                                                                                                                                                                                                                                                                                        non-profi
and this
requires
an email t
                                                                                                                LYSEGE
                                                                                                 ۲
                                                                                                                                 ∽
                                                                                                                                                S
                                                               INK-----G
: | †
VQKDLKVVPYKIVKASNG
                                                                                                                                SSVRSVSTTSCRDLQAITE
                                  -NWVT
                                                SPDKLHDAMAVS
                                                                                                                                                                                                                                                                                                                                                                                                                                         PROT
               GVST
                                                                                                  ENAE
                                                                                                                                                                 lari
Cons
: | || :|
-ALAYGLDKDA-
                                                                                                )----11
|-----1
|GVRTTI
               AGGLVANAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                           LOCATION:
BELONGS TO
                                                                                                                                                                 ty
                                                                                                                                                                                                                                                                                                                                                                                          rt
                                 -AVVT
                                                                                                                                                                                                                                                                                                                                                                                         OB
                                                                                                                                                                                                                                                                                                                                                                                  license ac
                                                                                                  P
                                                                                                                                                RDLQAIT DY LKHHVFAAHRFSVIGSP DERDAALAHN EQ I DALVET RANR
                                                                                                                                                                 TT.
                                                                                                                PATIAETFAKAEKF
                                                                                                  S ...
                                                                                                                                                                 てこ
                                                                                                                                                                 1
1
                                                                                                TVAFT
                               VPAYFNDSQRQATKDAG-
                                         VKRHSPALGRQVV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                           O.L
                                                                                                                                                                         59
FGDRMLSVQSI
||::::|
-GDKI IAVY--
                                                                                                                                                                                                                                                                MELL
                                                                                                                                                                         പര പര
                                                                                                                                                                                                                                                                           . . . . . <del>. .</del>
                                                                                                                                                                                                                                                                                                                            \circ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mitochondri
O THE HEAT S
                                                                                                                                                                                                 MW;
                                                                                                                                                                        20.00
                                                                                                                                 DKPKGHVIO
                                                                                                                                                                                                                                                                                                                                                                                                      pyright. It e of Bioinf Institute.
                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                         is not removed.
agreement (See heisb-sib.ch).
                                                                                Ÿ
                                                                                                                                                                 60
                                                                 DAWVEAQGKVYSPSQVGAF
                                                                                                                                                                                                MITOCHONDRION (POTENTIAL).
HEAT SHOCK 70 kDa PROTEIN F
V -> E (IN REF. 2).
S -> P (IN REF. 2).
A -> P (IN REF. 2).
KA -> NV (IN REF. 2).
KA -> NV (IN REF. 2).
                                                                                                                                                                                                                                                                  d • • •
                                                                                                  \rightarrow
                                                                                                 DGE -
                                                                                                                                                                         Pr
                                                                                                                                                                 *•
                                                                                WLATPLKPLTPLISGALSGAMDQVGTKMMDRARGDLHYLS
                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                  O.
                                                                                                                                                                ced. No.
                                                                                                 :
:RLVGA
                RDQLRGGAFVLGMKDKEPKAALSEETDWLDAYKAI
                                                                                                                                                                                                                                                                                                                                                                                                It is produced through a collaboration informatics and the EMBL outstation tea. There are no restrictions on its slong as its content is in no way removed. Usage by and for commercial nt (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                 ťa
                                                                                                                                 G
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SH
                                         DMGIAVQTFSALNVVRTVLAPALASRPSVQGAV
 DLGGGTF-
                                                                                                                                                                 19; DB
5.5:9;
atches
                                                                                                                                                                                                                                                                 mily;
                                                                                                | | | |: || || :: :| |
| PAKRQAVTNSA---NTLFATKRLIGRRYEDPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                       HOCK PROTEIN 70 FAMILY.
                                                                                                              -DRLATTASSAFENTPFAAASVL--QYMQPA
                                                                                                                                                                                                                                                                 Mitochondrion;
                                -QISGLNVLRVINEPTAA-
                                                                                                                                                                 162;
                                                                                                                                                                                -
                                                                                                                                                                                Length
                                                                                                                                                                 Indels
                                                                                                                                 --LGTTNSCVSIMEGKTPK
                                                                 -VIMMKETAES-
                                                                                                                                                                                 657;
                                                                                                                                                                 168;
 DVSILEIQK--
                                                                                                                                                                 Gaps
                                                                 --YLG
                                                                                 182
                                                                                                                  137
                                                                                                                                                  88
                                                                                                  110
                                                 241
                                                                 161
                301
                                 204
                                                                                                                                 54
                                                                                                                                                                 26;
```

```
δÃ
                                                                                                                                                       Qy
                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                        δ
                                                                50
                                                                                                                                                                                                  γQ
                                                                                                                                                                                                                         밁
                     Ş
                                             日
                                                                                        뮍
                                                                                                                                   뫄
                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                            Query N
Best Lo
Matches
                                                                                                                                                                                                                                                                                                                                                     EMBL; Z94723; CAB08123.1; -.
EMBL; AL583920; CAC31342.1; -.
PIR; C87029; C87029.

Leproma; ML0961; -.
HAMAP; MF_00172; -; 1.
InterPro; IPR006276; Met_syn_B12ind.
InterPro; IPR002629; Methionine_synt; 1.
Pfam; PF01717; Methionine_synt; 1.
ProDom; PD004692; Methionine_synt; 2.
TIGRFAMs; TIGR01371; met_syn_B12ind;
Transferase; Methyltransferase; Methicomplete proteome.
METAL 647 647 ZINC (BY METAL 732 732 ZINC (BY SEQUENCE 760 AA; 82234 MW; 1E92FA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                   SN
BN
                                                                                                                                                                                                                                                                                                                                   tch
                                                                  342
                                                                                                                                                                                                   187
                       402
                                                                                                                                                                                                                                               145
  335
                                            1
                                                                                       N
                                                                                                             288
                                                                                                                                   \vdash
                                                                                                                                                         242
                                            84
                                                                                       27
                                                                                                                                   67
                                                                                                                                                                              28
                                                                                                                                                                                                                         08
                                                                                                                                                                                                                                                                   28
                                                                                                                                                                                                                                                                                        85
                                                                                                                                                                                                                                                                                                              91
91
                                                                                                                                                                                                                                                                                                             Similarity
; Conserv
                                                                                                                                  TFL-
                                                                                                              LSEE!
                                                                                                                                                                                                                                                                   RATEGYWAKRTSRSELESVASTLRRDMV
  S
                     VKKAESFIQDKVKSTASSTTSYVADQT\
                                                                                       EAVYTALGSVSKRPAI
                                                                                                                                                          PF
                                                                                                                                                                                                                                                                                        RANRLYSEGE
                                                                                                                                                                                                   KLHDAMAVSVKRHSPALGRQVVDMGIAVQTFS---
                                             LAGKTLVAGIVDG
 : |: : | ::| : | |
                                                                 KNGLALAGGYAGVS
                                                                                                                                    3
                                                                                                              TDWLDAY
                                                                                                                                 H:: | :
KGINGGGAPIQRLE
                                                                                                                                                                                                                                             LTPLISGALSGAMDQVGTKM-
                                                                                                                                                         GVSTAGGLVAN
                                                                                                                                                                                                                        rva
                                                                                                                                                                              VPEI EPA
                                                                                                                                                                                                                                                                                        TPATIAET
                                                                                                             주
                                                                                                                                                                                                                                                                                                              4
                                                                                                                                                                                                                                                                                                              する
                                                                                                                                                                                                                                                                                                            4.0
Ve
                                                                                                           AIKSASYSGAALNAGKRMAGL---PLD-VATDGLKAVRSLVSATSL
                                          KLQKMATKNITDSATKAAVSQLSNLVGSVGVFAGWTTAGLATDPA
:|| : ::|:|:|:|| | | |: | |
|-----RNIWRTDLESALSKLATLLGSAATVAVSTSCSTLHVPY
                                                                                                                                                                                                                                                                                                                        79
                                                                                                                                                                                                                                                                                                                       d0 d0
                                                                                                                                                                                                                                                                                        'n
                                                                                                                                                                                                                                                                                                              \boldsymbol{\omega}
                                                                                                                                                                                                                                                                                        AKAEKF DRLAT TASSAFENTP FAAASVLQYMQPAINKGDWL
                                                                                                                                                                                                                                                                                                              O/
                                                                                                                                                                                                                                                                                                            Score 118.5;
Pred. No. 7.7;
6; Mismatches
                                                                                                                                   ELVGI
                                                                                         G
                                                                                                                                                        AGFGDRMLSVQSRD---
                                                                                                                                                                                                                                                                                                                                                                                                                                          synt
                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                        (BY
(BY
(BY
2FA5
                                                                                                                                                                                                                                                                                                                                                                                                            2.
d; 1.
thionine biosynthesis;
ES.
                                                                                      -NPGASLAGLARTPIEAIGVDFVCGADTSVAAVPE
                                                                                                                                                                                                                                                                                                                    118.5; L
                                                                                                                                                                                                                                                                                                                                                        BY SIMILARITY).
BY SIMILARITY).
BY SIMILARITY).
FA570B9ACC97 CRC
/KLAKTV---KDMSGEAISSTGASLRSTVNNLR
| ||::| :| ::|::| ::|
/VLARALRDGRDAVADEIAASNAAVASRRSDPR
                                                                                                                               -TTFSLNPGKILGELKEALEQRIPSRPVIIGPV
                                                                                                                                                                                                                                                                    VSDLAAAGLDSVP---VNTFSYYDQMLD-
                                                                                                                                                                                                                                             ---MDRARGDL--
                                                                                                                                                                                                                                                                                                                                   DB 1;
                                                                                                                                                                                                                                                                                                              173;
                                                                                                                                                                                                   --ALNVVRTVLAPALASRPSVQGAV
                                                                                                                                                                                                                                                                                                                                                         CRC64;
                                                                                                                                                         -QLRGGAFVLGMKDKEPKAA
                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                   Length 760;
                                                                                                                                                                                                                                                                                                                                                                                                               Zinc;
                                                                                                                                                                                                                                                                                                             101;
                                                                                                                                                                                                                                              -HYLSTSPD
                                                                                                                                                                                                                                                                                                                                                                                                              Repeat;
 393
                                                                                                             341
                                                                                                                                                         287
                                                                                                                                                                              166
                                                                                                                                                                                                                         127
                                                                                                                                                                                                                                               186
                                                                                                                                                                                                                                                                                        144
                      458
                                             334
                                                                  401
                                                                                       283
                                                                                                                                  226
                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                    79
                                                                                                                                                                                                                                                                                                              18;
```

QV QV 멍 394 459 -HRSAPEADIE | | : | LHNGQVRARID 468 404

Search completed: January Job time : 21 secs 6 2004, 09:45:44

> Copyright GenCore (c) 1993 version - 2004 5.1.6 Compugen Ltd.

8 protein protein search, using MS model

on: January Ŷ, 2004, 09:36:48 ; Search (without 3222.349 time 39 Seconds alignments) Million cell updates/sec

Title: Perfect : Sequence: US-09-825-414-6 2407 1 MHINQSAQQPPGV 96

score: MHINQSAQQPPGVAMESFRT .EEGGISAFSRSETPFQLRRL

487

Scoring table: BLOSUM62 Gapop 10. 0 Gapex

ct

0

Searched: 830525 seqs, 258052604 residues

number of hits satisfying chosen þa rameters: 830525

Minimum Maximum 踞 length:
length:

seq 0 20000000000

Post-processing: Minimum Match Maximum Match Listing first 0% 100)% summari 93

SPTREMBL 23:*

1: sp_archea:*
2: sp_bacteria:*
4: sp_human:*
5: sp_fungi:*
6: sp_mammal:*
7: sp_mhc:*
9: sp_phage:*
10: sp_phage:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_rvirus:*
16: sp_bacteriap:*
17: sp_archeap:*

Pred. No. is th score greater to and is derived the nu r than ed by a number of results in or equal to the ranalysis of the t number OH. predicted by chance to have a score of the result being printed, total score distribution.

SUMMARIES

No.	Result
Score	
	Query
Match Length I	
DB ID	
Description	

ARTOMORDACTED	7757	٨	Ü	•	SI.	C.
Q91185	2 091185	یم ر	6077	n 5	132	44
a4u7 cau	Q9A4U	<u>, , , , , , , , , , , , , , , , , , , </u>	65	•	32	43
•	20	11	12	•	ω ·	42
Q8p1p0 streptococo	Q8P1P	H (30	5.5	•	
3	Q92SD	16	23		ω ·	
8 yersinia	QBDOR	16	2579	•	w	39
φ	Q8ZD		S	5.6	L C	38
	Q9KwR		17	•	•	37
bit0	Q Q		21	•	4	36
ú	Q M		71		•	35
strept	6 Q8K792	16	ၾ	•	4	34
white	0		6077	•	(L)	33
		1;	97	•	w	32
		16	97	•	13	31
9 staphyloc		16	18	•	•	30
Q8mvw6 naegleria g	QBMVW6		1952	•	35.	29
Q9vkl0 drosophila	0		96	•	ω	28
	6 Q9RDQ1		54	•	Ü	27
Q8vq99 staphylococ	0		28	•	•	26
Q8nms0 corynebacte			99	•	13	25
Q8u8w4 agrobacteri	Ω		73	•	Û	24
Q8pli2 xanthomonas	6 QBPLI2		43	٠	Ü	23
Q9vw05 drosophila	Q9VW05		1242	•	ببر ند)	22
Q8p942 xanthomonas	6 Q8P942		96	•	38.	21
	Ω		548	•	8	20
a	Q8RTY4	N	491	•	38.	19
cj9	160	16	1795	5.8	139.5	18
Q93gt1 campylobact	Q93GT1		49	•	9	17
031976 bacillus su	0		2285	•	14	16
	4046		28	5.8	4	15
Q9fcq5 pseudomonas	Q9FC	2	50	•	4	14
_	Q99TB	16	2186	•	0	13
sta	Q931N	16	98	5.8		12
Q8xsw6 ralstonia s	WSX80	16	642	•	•	11
Q9hpa2 halobacteri	Ω	<u></u>	536	•	4	10
3 xant	Q8PLI	16	75	•	4	9
	XM80	4	15	5.9		æ
085472 abiotrophia	08547	N	9	•	ယ	7
Q92k98 rhizobium m	Q92K9	16	80	•	4	σ
	MBNBÖ	16	Ō	•		ப
Q8ufp9 agrobacteri	Q8UFP		15	•	•	4
0	08XQ			9.	46	ယ
Q8rp03 pseudomonas	QBRP03	N	484	66.1	1591.5	2
Q9jp34 pseudomonas	9JP3	N	$\boldsymbol{\omega}$	7.	869.	1

```
RESULT
Q9JP34
ID Q9
AC Q9
DT 01
DT 01
DT 01
Q9JP34;
Q9JP34;
01-OCT-2
01-DEC-2
-2000
-2000
-2001
(TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                  PRELIMINARY
15,
Created)
Last sequ
Last anno
                  PRT
                                         ALI GUMENTS
sequence update) annotation updat
                  \infty
                  \boldsymbol{\omega}
                  ⋧
update)
                                                      Ce ce ries
```

```
Λ0
                                                                      δδ
                                                                                                                   δÃ
                                                                                                                                                                  60
  문
                                               망
                                                                                              믕
                                                                                                                                             문
                                                                                                                                                                                      Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                 SEQUENCE FROM N.A.

STRAIN=DC3000;

MEDLINE=98422476; PubMed=9748456;

Charkowski A.O., Alfano J.R., Preston G., Yuan J., He S.Y.

Charkowski A.O., Alfano J.R., Preston G., Yuan J., He S.Y.

Collmer A.;

"The Pseudomonas syringae pv. tomato HrpW protein has dome
to harpins and pectate lyases and can elicit the plant hyp
response and bind to pectate.";

J. Bacteriol. 180:5211-5217(1998).

[2]

SEQUENCE FROM N.A.

STRAIN=DC3000;

MEDLINE=20243785; PubMed=10781092;

Alfano J.R., Charkowski A.O., Deng W.L., Badel J.L.,
Petnicki-Ocwieja T., van Dijk K., Collmer A.;

"The Pseudomonas syringae Hrp pathogenicity island has a tomosaic structure composed of a cluster of type III secretic bounded by exchangeable effector and conserved effector locontribute to parasitic fitness and pathogenicity in plant proc. Natl. Acad. Sci. U.S.A. 97:4856-4861(2000).

[3]

SEQUENCE FROM N.A.

STRAIN=DC3000;

Ramos A.R., Rehm A.H., Collmer A.R.;

"Pseudomonas syringae pv. tomato DC3000 hrpL through hrcU. Submitted (MAR-2001) to the EMBL/GenBank/DDBJ databases.

EMBL; AF232004; AAF71504.1; -.

Hypothetical protein.

SEQUENCE 486 AA; 50709 MW; 91CFBC03397F8AD1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hypothetical
Pseudomonas s
Bacteria; Pro
Pseudomonadac
Pseudomonadac
NCBI_TaxID=32
[1]
[1]
SEQUENCE FROM
STRAIN=DC3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         dypothetical 50.7 kDa protein
pseudomonas syringae (pv. tor
pacteria; Proteobacteria; Gar
pseudomonadaceae; Pseudomonas
vCBI_TaxID=323;
                                                                                                                                                                                        Match
Local :
es 38:
  181
                         181
                                               121
                                                                      12
                                                                                             \boldsymbol{\varphi}
                                                                                                                    \boldsymbol{\varphi}
                                                                                                                                                                                            _
                                                                                                                                           LSTSPDKLHDAMAVSVKRHSPALGRQVVDMGIAVQTFSALNVVRTVLAPALASRPSVQGA
                                             imilarit
                                                                                                                                                                                        rvat
                                                                                                                                                                                         アレン
                                                                                                                                                                                        7.
78.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein
                                                                                                                                                                                                                                                                        Collmer A.R.;
v. tomato DC3000 hrpL through hrcU.
the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                    4
                                                                                                                                                                                                      do do
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  tomato).
Gammaprot
                                                                                                                                                                                                     24. 24
                                                                                                                                                                                          {\mathfrak U}_{\mathfrak Q}
                                                                                                                                                                                        Score
Pred.
; Mis
                                                                                                                                                                                        Mism
                                                                                                                                                                    16.
No. 16
smatches
                                                                                                                                                                                                                                                                                                                                   uster of type III secretion genes and conserved effector loci that a pathogenicity in plants."; 856-4861(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                   1869.5; DI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bacteria;
                                                                                                                                                                                                               DB 2;
                                                                                                                                                                                        71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pseudomonadales;
                                                                                                                                                                                          Indels
                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                domains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypersensitive
                                                                                                                                                                                                                 486;
                                                                                                                                                                                        9-4
5-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               similar
                                                                                                                                                                                        Gaps
                                                                       081
                                                                                                                      120
                                                                                                                                             60
  240
                         240
                                                180
                                                                                              120
                                                                                                                                                                    60
```

41

VDFGVSTAGGLVANAGFGDRMLSVQSRDQLRGGAFVLGMKDKEPKAALSEETDWLDAYKA

300

```
SOR RANK RANK OCC OF DITCE
                                                                                                                                                                                                                                           50
                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                              뮹
                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                Š
                       Š
                                             Š
5
            밁
                                  뮹
                                                                                                                                                                                                                                                                                                                            몽
                                                                                                                                                                                                        ESULT
BRP03
                                                        Query
Best I
Matche
                                                                                                                                                Q8RP03;
Q8RP03;
Q8RP03;
Q1-JUN-2002 (TrEMBLrel. 21, Cr
Q1-JUN-2002 (TrEMBLrel. 21, La
Q1-JUN-2002 (TrEMBLrel. 21, La
Type III effector HopPtoAlPma.
Pseudomonas syringae pv. macul
Pseudomonas syringae pv. macul
Psecteria; Proteobacteria; Gamm
                                                                                                     STRAIN=ES4326;
MEDLINE=21862332; PubMed=118726
Guttman D.S., Vinatzer B.A., Sa
Greenberg J.T.;
"A Function-"
                                                         et Loc
                                                                                                                                             Bacteria; Proteoba
Pseudomonadaceae;
NCBI_TaxID=59511;
                                                                                                                                   NCBI_Tax
[1]
SEQUENCE
                                                                                Pathor
Scient
EMBL;
SEQUE
                                                                                Pathogen Pseudomonas
Science 295:1722-172
EMBL; AF458051; AAL8
SEQUENCE 484 AA;
                                                                    M
                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                    301
                                                                    rt
                                                                                                                                                                                                                                4
                                                                                                                                                                                                                                                       4
                                                                                                                                                                                                                                                                  Δ
                                                                                                                                                                                                                                                                             w
                                                                                                                                                                                                                                                                                         (L)
                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                            N
                                                                                                                                                                                                                                                                  21
21
                                                         C) in
                                                                   Ch
                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                            41
                                                                                                                                                                                                                                œ
                       19
                                                                                                                                                                                                                                                       N
            S
                                                                                                                                                                                                                                0
                                  -
            9
                                                          0
                                        MHINQSAQQPI
                                                              imi
                                                                                                                                                                                                                                                                             MATKNITDSATKAAVSQLSNLVGSVGVFAGWTTAGLATDPAVKKAES
                                  |:||:|
MYINRSISSQSS
                                                                                                                                                                                                                                                                                                    ש
                                                                                                                                                                                                                                                           TSYVADQTVKLAKTVKDMSGEAISSTGASLRSTVNNLRHRSAPEADIE
                                                                                                                                                                                                                                                                                                                           PFQLRR
                       VIGSPDERDAALAHNEQIDALVETRANRLYSEGETPATIAETFAKAE
                                                                                                                                                                                                                                                      GYVADQTVKLAKTVKDMGG
                                                                                                                                                                                                                                RPMR
                                                               ---
                                                         Conserva
                                                               15
 FAAASVLQYMQPAINKGDWLATPLKPLTPLISGALS
                                                               ₩.
                                                              ty
                                                                                                                                                                                                                                485
                                                                                                                                                                                                                                           486
                                                                                                                                                      Pseudomonas
                                              שׁ
                                                                                       S CA CO
                                                                                s syringae.
26(2002).
34253.1; -.
50520 MW;
                                                         66.1%
67.6%
htive
                                 maculicol
                                                                                                                                                           Gammapr
                                                               51.54
                                                          S
                                                                                                                                                                           Last
Last
                                                                                                                                                                                       Ç
                                                         \vdash
                                                                                                 Type
                                                                                                                   72842
Sark
                                                                                                                                                                                                                                                       ËŽI =
                                                        50
                                                               S
                                                                    core
                                                                                                                                                                                       e
Q
                                                                                                                                                                                                    PRT
                                                                                 108d
                                                                                                                                                                                                                                                       : |||||:||:|||
                                                          Mismatches
                                                                                                                                                                                 sequen
                                                                                                                                                                            anno
                                                                                                                                                           Ó
                                                                                                                                                                                        90
                                                                                                                                                           CT DV
                                                               1591
No.
                                                                                                                                                           eoba:
                                                                                                       \vdash
                                                                                 2DD5
                                                                                                       \leftarrow
                                                                                                                    S
                                                                                                                                                                            ţ
                                                                                                                    Д,
                                                                                                                                                                            ţį.
                                                                                                                                                           O
                                                                                                                                                                                  Ω
                                                                                                       d,
                                                                    Ç
                                                                                 \omega
                                                                                                                                                           rt
                                                                                                                                                                                  Ф
                                                                                                                                                                             9
                                                                                 \boldsymbol{\omega}
                                                                                 Ф
                                                                                                                   Ra
                                                                                                                                                                                 update)
                                                               Φ
                                                                                                                   na
E
                                                         DB .
                                                                                                                                                                            update
                                                                                 63E
                                                                                                                                                           œ
                                                                                                        Se
                                                                                                                                                           ٠.
                                                                                                                                                                                                                                                                             O
                                                                                                                                                           PS
                                                                    N
                                                                                                                    \vdash
                                                         34
                                                                                 O
                                                                                                        O
                                                                    •
                                                                                                                   X
 GAMDQVGT
                                                                                                                                                           eudomon
                                                                                                                                                                                                                                                        Ţ
                                                                                 공
                                                                                                        4
                                                                                                        ome
                                                                                                                                                                                                                                                        ARE
                                                          Indels
                                                                    Length
                                                                                 Φ
                                                                                                       0
                                                                                                                    ス
の
                                                                                                        HH)
            ス
                                                                                                                                                                                                                                                       百一
                                                                                                                                                                                                                                                                               ரு
                                        || ||||||||
||LTDHVFAAHRLP
                                                                                                                                                           da
KMMDRARGDLHY
                                                                                                                                                                                                                                                                   EGGISAF
           FDRLATTASSAF
                                                                                                                                                                                                                                                                             QDTVKS
                                                                                                                                                                                                                                                                                                                           he
                                                                                                                   tle
                                                                                                                                                                                                                                                                                         QDKVKSTASS
                                                                                                                                                                                                                                                                                                                            ENDWLE.
                                                                     \boldsymbol{\omega}
                                                                                                                                                           Φ
                                                          J
                                                                     4
                                                                                                        Plant
                                                                                                                                                                                                                                                                                                                                 =
                                                                                                                    Ħ
                                                        **
                                                                                                                    Q
                                                                                                                                                                                                                                                                  SRSET
                                                                                                                                                                                                                                                                             ||||
TASS
                                                         Gaps
                                                                                                                                                                                                                                                                                                                            IIIII
AYKA
                                                                                                                                                                                                                                                       РS
                                              S
                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                           300
 180
                                                                                                                                                                                                                                                                                                     360
                                   S
                                                                                                                                                                                                                                                                              4
                                                                                                                                                                                                                                                                                         10
                                              O)
            18
                       20
                                                                                                                                                                                                                                                                                         20
                                                                                                                                                                                                                                                                                                                60
                                   α
                                                                                                                                                                                                                                                                              20
                                              0
                                                         Û
                                                         200
```

```
δõ
                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                     Ã0
                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                           50
                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                          몽
                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                       D
D
                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                               SULT
EXQFO
                                                                                                               Q8XQF0;
Q8XQF0;
01-MAR-2002 (TrEMBLrel. 20,
01-OCT-2002 (TrEMBLrel. 20,
01-OCT-2002 (TrEMBLrel. 22,
Putative transmembrane prot
RSP1277 OR RS05322.
Ralstonia solanacearum (Pse
Plasmid megaplasmid.
Pacteria; Proteobacteria; E
                           Bacteria; Proteobacteria; Betaprot Ralstoniaceae; Ralstonia.
NCBI_TaxID=305;
[1]
SEQUENCE FROM N.A.
STRAIN=GMI1000;
MEDLINE=21681879; PubMed=11823852;
Salanoubat M., Genin S., Artiguena Arlat M., Billault A., Brottier P. Chandler M., Choisne N., Claudel-R Gaspin C., Lavie M., Moisan A., Ro Siguier P., Thebault P., Whalen M. Weissenbach J., Boucher C.A.;
"Genome sequence of the plant path
Nature 415
EMBL; AL64
Plasmid; C
SEQUENCE
                                                                                                                                                                                                                        Ĺ
                                                                                                                                                                                                                                                             479
                                                                                                                                                                                                                                                                             419
                                                                                                                                                                                                                                                                                           42
                                                                                                                                                                                                                                                                                                           359
                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                        239
                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                       179
                                                                                                                                                                                                                                                                                                                                                                                                                                     11
                                                                                                                                                                                                                                                                                                                                                                                                                      Ф
                        e sequence
415:497-50
                                                                                                                                                                                                                                               ~
                                                                                                                                                                                                                                                                                                                                          Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                               \mathbf{O}
                                                                                                                                                                                                                                                                                                                                           φ
 ...epault P., Which J., Boucher C. sequence of the pl. 5:497-502(2002). 46083; CAD18428.1 Complete protections
                                                                                                                                                                                                                                                     ETP
                                                                                                                                                                                                                                                                            VDIS'
                                                                                                                                                                                                                                                                                                                                                                                       VDF
                                                                                                                                                                                                                                                                                                                                                                                                      LSTSPDKLHDAMAVSVKRHSPALGRQVV
                                                                                                                                                                                                                                                                                                                                                                                                                                     RATPFAAASVLQYMQPAINKGDWLP
                                                                                                                                                                                                                                               AVPFEAMR
                                                                                                                                                                                                                                                                                                                                         4
                                                                                                                                                                                                                                                                                                                                                                       QLRR
                                                                                                                                                                                                                                                                                                                                                                                                              PDKLHDAMAVSVKRHSPALGRQVVDMGIAVQTFSALNVVRTVLAPALASRPSVQGA
                                                                                                                                                                                                                                                              486
                                                                                                                                                                                                                                               483
                                                                                                                                                                         NO0
                  \vdash
                                                                                                                                                   seudomo
                                                                                                                                   Betaproteobacteria;
                54
                                                                                                                                                                   Œ
                                                                     tiguenave
tier P., (
                                                                                                                                                                         Last
Last
                                                                                                                                                                   ij
                                                                                                                                                                                         O
                                                                                                                                                                                         reated)
                                                                                                                                                                                                         Ř
                                                Σ.
  12D4
                                                              -Ren
                                 tho
                                                       Robe
                                                                                                                                                   Ē
                                                                                     N
                                                                                                                                                                         sequence update) annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                     TPL
                                                                                                                                                   Ú
   \boldsymbol{\omega}
                                Ď
                                              F., Gouzy J., Mangenot S.,
Camus J.C., Cattolico L.,
ard C., Cunnac S., Demange N.,
rt C., Saurin W., Schiex T.,
Wincker P., Levy M.,
                                 Ø
                                                                                                                                                   ù
   6715F0F60EE
                                                                                                                                                                                                                                                                                                                                                                                                      518
                                                                                                                                                   olanacearum)
                                 Ralstonia
                                                                                                                                                                          update)
                                                                                                                                    Burkholderiales;
   CRC64;
                                 solanacearum
                                                                                                                                                                                                                                                                             475
                                                                                                                                                                                                                                                                                                                                                                                                                                     178
                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                           418
                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                          358
                                                                                                                                                                                                                                                                                                                                                                         298
                                                                                                                                                                                                                                                                                                                                                                                                       238
                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                            478
```

Query Best I Matche ches Loc Ma tch ď ω Simi 19; larity Conserv rva CT. 19 32 40 000 54 54 O ω Score Pred. ; Mi: smatc 460; No. he N DB Sei S μ $\sigma \sigma \sigma$ **φ** > · · · Leng \vdash nde 5 S 9 4 G ρ SG N

Clendennin

50 40 Š 50 ΛÕ Q 문 S Š 맑 맑 밁 40 밁 밁 340 317 204 37 257 4 (L) 4 -2 N 65 80 Û 18 16 $\boldsymbol{\alpha}$ Φ N 9 N 4 S J $\boldsymbol{\varpi}$ **~** Φ. ω ω QLR-DI NLI. NRDRLAQTTVG O .. D | :|| ||: : :
TGVAPLATHALGAARAAN---QVGTKMMDRARGDLHYLSTSPDKLHDAMAVSVKRHSPALGRQVVDMG VMAGPA LATDPAVKKAESFIQ S AFGGTLLGKATSNTQWLAASPDHLEPVMAQAHKAVQPSLGRLAAEVSLAFQTYSLRNVIR KEDRLATTAS YLKHHVFAAHRFSVIGSPDE DKEPKAALSEETDWLDAYKAIKSASYSGAALNAGKRMAGLPL-ESFRTASI :| |: |)SERSNSI H KNGLALAGGYAGVSKLQKMATKNITDSA-TKAAVSQLSNLVGSV-|| |||||:||| | | | :: |:|||: : |:| | KNMGALAGGFAGVLTAQTAAGKAATEAGYTEAAVAAVRRAVSTVL FRPH-IDAAAGHIQ DAS DVSQWFSAAAS ALAS RTDWE EAS. S FVRSVPFGIASRLFDVKQAL-SSVRSVSTTSCRDLQA-RPSVQGAVDFGVSTAGGLVANAGFGDRMLSVQSRDQLRGGAFVLGMK FDGTND-DQF F 410 49 IRAQS KQLKQSTWTDPLVGAGKRT = VDSWI AAVGGPVAGAAAYMAMQHMNETH RDAALAHNEQIDALVET RANRLYSEG GSIESNSE -AQFEILI Ġ, ď S EAAVAAVRRAVSTVL :: || |, | I QQRAERLQAMGE שי PHT AKLLVADLAT TAFAKTTARV _ ADPGQTGRG DVATIX AVQTESALNVVR HRTGAEYLLG-GATVGAGSGTAD GLKAVRSLVSAT PATVAAVLAKGA PATIAETE) |:| |||| APVYAAWTTAD DI = GVFAGWITAG -GALSGAMD PHWMPIAD U 395 280 316 256 203 339 4 482 \sim 07 64 G 22 J N $\boldsymbol{\sigma}$

JUS Ø RE LIMINARY;

RESUI PAC OC OC OC DI DI PAC D 01-JUN-2002 (01-JUN-2002 (01-JUN-2002 (Hypothetical ATU1348 OR AC 00000 SOLE D $\boldsymbol{\varphi}$ (TrEMBLrel. 21, (TrEMBLrel. 21, (TrEMBLrel. 21, l protein Atul348 ein A 2490. $\mathbf{\alpha}$ Crea: Last Last reated) PRT; sequence annotation N S Ç ጅ 음 upda upda ct Ф \leftarrow Φ

Agrobacterium tumefaciens Bacteria; Proteobacteria; Rhizobiaceae; Rhizobium. NCBI_TaxID=176299; (strain ro C58 8

ρ

ø

ATCC Heri

•• ω

20b

Ø

Ф

Ć 87 Rh

70

AGR.

വ

MEDLINE=21608550; Wood D.W., Setubal Okura V.K., Zhou Y 03S [1] Pubh J.C., Chen PubMed= 11 J 43193;

Okura Chen

ש

, Zhou aulsen

Kaul

R., P

Monks

D.

 C_{I}

Ka G

Q

(T)

Almeida N.F. C.P.D., Bovee D.

S

P\$ • •

Ċ

ΛÕ 20 Š 80 Š 밁 몽 Š 뮍 멍 밁 맑 Query N Best La Matche 823 125 609 875 310 273 763 235 717 180 660 69 Simila 96; Co DAFTNSHAKIDTVLAERSNALF DAALAHNEQIDALVETRANRLYS RTAALNAVVSGAEER EHLAAMLDERAAA INS VASAETRIAG-ALNAGKRMAGLPLDVAT £ **AAASVLQYMQPAINK** ANVEERLSETLDNRTSALTGIVASA TSPDKLHDAMAVSVKRHSPALGRQVVDMGIAVQTFSALNVVRTVLAPALASR----O **PSVQGAVDF** HDVVSGA VLGMKDKEPKAALSEETDWL ALDSRTDSLKTV S. VVADVERRLTET GVSTAGGLVAN RIADT 9 GDWLATP IADAL G T GETP _ გ SAT TDPAVKKAESFIQDKVKSTASSTTSYVADQTV DAYKAIKSASYSGA-|: |:||:|| |:: : | LETRAAAITGAVSGIEDRISDTLESRTAA---LKPLTPLISGALSGAMDQVGTKMMDRARGDLH AT SLTKNGLALAGGYAGVS KLQKMAT KN I TDS ATIAETFAKAEKFORLATTASSAF-tches 9.5; -GALSASQDRFDEALASRSLAITGSVSGTA 176; AGFGDRMLSVQSR--DQLRG Indels -VSGAEERIT-DVLDS 127; Gaps -ENTP 659 179 874 762 716 910 822 272 234 124 369 309 16;

SARRARARARARARARARARARA MEDLL.

Goodner b.,
Qurollo B., Gordon .

Wollam C., Allinger M., L.

Flanagan C., Crowell C., Gurs.
Cielo C., Slater S.;

"Genome sequence of the plant
Agrobacterium tumefaciens C5f
Science 294:2323-2328(2001).

EMBL; AE009096; AAL42354.1;
EMBL; AE008061; AAK87140.1;
Tothetical protein; Comple
TE 2155 AA; 230143 Chapman P., Cle Kutyavin T., Le Kutyavin T., Le Raymond C., Rou Zhang S., Yoo H Gordon-Kamm B., Chumley F., Tin Nester E.W.; "The genome of C58.";
Science
[2]
SEQUENCE QUENCE 294:2317-FROM N.A.
21608551; PubMe
B., Hinkle G.,
B., Goldman B.S
K., Gordon J., Rouse B., 410 Tingey 6.28 -urity 20.78 Conservative the Liao N PubMed=117431 R., G., Tao 32 s.v., natural 3 (2001 ng J., Deatherage
Li M.-J., McClel
Saenphimmachak C
Y., Biddle P., J
L., Kim S., Hendr
V., Tomb J.-F., G ., Doughty C., Gurson Gattung S S., Cao Y. Vaudin M. plant ns C58 1; -iplet 43 M genet. Score 149 Pred. No 5; Misma 3 0 ; pa မ လ လ thoge 0 H-S ... 4 oteome. FD28CCC6242ADD10 As 14 No en age G., Gillet W., Grant C., lelland E., Palmieri A., lelland E., Palmieri A., Kordon D., k C., Wu Z., Romero P., Gordon D., Jung M., Krespan W., Perry M., ndrick C., Zhao Z.-Y., Dolan M., Gordon M.P., Olson M.V., 49.5; Scott Lomo (н ス ıgineer ller N tchouk O., Epp A., Liu F., cott C., Lappas C., Markelz B., omo C., Sear C., Strub G., and biotechnology agent **X** : 몂 Agrobacterium Blanchard M., , Halling C., No., Epp A., Liu • 16; CRC64; Length C., Mul tumefaciens 2155; Mullin L.

RESULT
Q8U8W1
ID Q8
AC Q8
DT 01 50 맑 Query Ma Best Loo Matches Wood D.W., Setubal J.C., Okura V.K., Zhou Y., Chen Chen Y., Paulsen I.T., Ei Chapman P., Clendenning J Kutyavin T., Levy R., Li Raymond C., Rouse G., Sae Zhang S., Yoo H., Tao Y., Gordon-Kamm B., Liao L., Chumley F., Tingey S.V., Nester E.W.;
"The genome of the natura C58.";
Science 294:2317-2323(200) [2]
SEQUENCE FROM " Qurollo B., Goldman B.S., Cac Houmiel K., Gordon J., Vaudir Wollam C., Allinger M., Dough Flanagan C., Crowell C., Gurs Cielo C., Slater S.; "Genome sequence of the plant Agrobacterium tumefaciens C58 Science 294:2323-2328(2001). EMBL; AE009328; AAL44779.1; J EMBL; AE008285; AAK89449.1; -Complete proteome. SEQUENCE 1009 AA; 100468 N MEDLINE= Goodner I-JUN-2002 (TrEMBLrel. 21, (-JUN-2002 (TrEMBLrel. 21, I L-OCT-2002 (TrEMBLrel. 22, I De nucleation protein homolo NA OR ATU3977 OR AGR_L_1758. Probacterium tumefaciens (st acteria; Proteobacteria; Alp nizobiaceae; Rhizobium. TBI_TaxID=176299; Z Ō tch 430 Ø 9 9 127; _ $\boldsymbol{\sigma}$ N =216 8., 8., KLAKTVKDMSGEAISSTGASLRS RTMALDMSFSGVEEKITDILDGRTA ROM N 60855 : :: ||:| :| |::: : | | :| :: IVSGAEERIAEALDSRTLALDMTISGVEERIAEAMDARASSLS Hinkle Conservation Conservation the natural geneti PubMed= G., (ing J., Deatherage G., Gi., Li M.-J., McClelland E., Saenphimmachak C., Wu Z. O Y., Biddle P., Jung M., 3 (2001) 4 .c., 1 P- 70 Chen L., Wood, Eisen J.A., δ. 8 S., Cao Y., Vaudin M., Doughty I Gat plant ns C58 1758 **4** =11743193; Kaul R., l Tomb Kim ap ap (strain tung 34 34 ALT ૠું; ĝ Las Las C rea 30 S ₩ood pa ; core S 19 ŘŦ, Ď. $\boldsymbol{\sigma}$ 4 d. thogen J. P., Jung M., Hendrick C., 2 ct \sim TVNNLRHRS seque (be O Monks Askenazi Iartchou sequence nnotat smatches G.E. • engineer Z O 149; Miller D842 Lomo $\boldsymbol{\omega}$ cott C. . 0 O) φ 830E8C65 שי D.E., Almei **⊢** • ALKSAVAGVEDRI AGALI Ġ eri 멂 9 \mathbf{C} -APEADIEE update) on updat z Z D., Bovee Gillet W. E., Palmieri A
2., Romero P.
1., Krespan W.,
.., Zhao ? 5 Agrobac œ 228; Φ -Lappas Zhao P., C Kit da Ü Blanchard 24 technology 1970) Rhiz Halling [7] Epp (F) N.F. GGI Lengi CRC (A × O 5 64 Jr S 100 • O Z ant \succ 9 W Markel 5 DSRTAALS C Perry Dolan V., ; 60 gent tumef. ***** • Mull 3 Gordon ? Ģ. 0 in ac N Z G В ₽sd en Ø 61 N Ş δõ δÃ δÔ Ş Ş Db ΛÖ DЬ Λ̈́δ ΛÕ 멍 δÃ 日 밁 밁 δÃ 멍 B SUL 2K9 SULT PK98 Q92K98 Q92K98 01-DE0 01-DE0 01-MAI Hypoth R0181 $\boldsymbol{\omega}$ 2K98; 2K98; -DEC--DEC-)EC-2001 (TrEMBLrel.)EC-2001 (TrEMBLrel.)AR-2003 (TrEMBLrel.)thetical transmembra:)16 OR SMC00190. 117 41 371 45 31 39 34 21 465 S -N N \sim œ 77 w 63 -0 $\boldsymbol{\omega}$ J σ Ō Q) 4 O/ O $\boldsymbol{\omega}$ $\boldsymbol{\omega}$ æ ω SKAQVSALSI KTQIAGLS: AGLS ASQI 爻 U S GSPDERDAALAHNEQI DALVETRANRLY W **AQQPPGVAMESFRTASDASLASS** : :GANAVAGLS*)* **'**TJ LALFS AALS! SAF FSA KAAVSQLSNLVGSVGVFAGWTT KRMAGL SA H -3 GAFVL LSTS S LNVVRTVLAPALASRP TKALGGLDVTKLSTGNIAALTKAQ ENTPFAAASVLQYMQP DAMSTDQIKALINSSQVAGLSSAQV 꼺 TDNAAALTKSQIAAMS KAQVSALS **EQVAGLSSAQVATLS** DEI KAI ST KALA LIMINARY TDEI KAI GANAVA SPDKLHDAMAVS\ STQLNALTSGSIATFSADEV *G*MKDKEPKAALSE TASSTTSYVADQTVKLAKT PLDVATDGLKAVRSLVS TTQFAAMSTDQ-ADI EEGGISAFSRS 19 19 23 QFAAMSTDQ TDNASALTKT Create Last : Last : VKRHSPALG ģ STD SVQGAVDE STOFNALT SDELALF PRT 一 四 SVRSV AAALA seque GLDV ed) S N **>** 680 STTSCRDLQAI-TDYLKH---HVFAAHRFSVI 644 479

```
Rhizobium meliloti (Sinorhizobium melil
Bacteria; Proteobacteria; Alphaproteoba
Rhizobiaceae; Sinorhizobium.
NCBI_TaxID=382;
[1]
SEQUENCE FROM N.A.
STRAIN=1021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AINKGDWLATPLKPLTPLISGALSGAMDQVGTKMMDRARG
                                                                                       uence update)
otation update)
Mc00190.
                                                        liloti).
obacteria;
                                                                                                                                                                                                                                                                                                                                             TSLTKNGLALAGGYAGVSKLQKMATKNITDSA::: |||| : |::| |::: |
KAISTK--ALAG-----LDVTKLSTGNVA-AL
                                                                                                                                                                                                                                                                                                                                                                                           TKLSTGNIAALTKTQAASLSSTQFAAMSTDQI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SGSLATESADEVKA I SNKI LAGLDVTKLSTGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATLSSDELALFTTDEIKSISANAIAGLSAAAI
                                                                                                                                                                                                                                                       QIAGMSSTQINAL-
                                                                                                                                                                                                                                                                            -VKDMSGEAISSTGASLRSTVNNLRHRSAPE-
                                                                                                                                                                                                                                                                                                                                                                                                                TDWLDAYKAIKSASYSGAALNA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GVSTAGGLVA--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ALTT DNAAALTKTQ I AGLSSTQLNALTSANLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RQVVDMGIA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEGETPATIAETFAKAEKF-----DRLATTA
                                                                                                                                                                                                                                                                                                 | | | ::|:
LTSEQVAGLSSAQVATLSSDELALFSTDEIKA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                --IKALTSDQVAGLSSA--QVATLSSD-
                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                         -AGLATDPAVKKAES-
                                                         Rhizobiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             -NAGFGDRMLSVQSRDQL
                                                                                                                                                                                                                                                       TSANLATESADEI
                                                                                                                                                                                                                                                                                                                         --FIQDKVKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     116
                                                                                                                                                                                                                                                                                                  562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           177
                                                                                                                                                                                                                                                                             464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        176
                                                                                                                                                                                                                                                                                                                                                507
                                                                                                                                                                                                                                                                                                                                                                                           455
                                                                                                                                                                                                                                                                                                                                                                                                                                        395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    343
                                                                                                                                                                                                                                                                                                                                                                      370
                                                                                                                                                                                                                                                                                                                         415
                                                                                                                                                                                                                                                                                                                                                                                                                 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                             270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 284
```

62

442 665	GLATDPAVKKAESFIQDKVKSTASSTTSYVADQTVKLAKTVKDMSGEA : : : : : : :: : : : : AQERIENGFGQRADALANALTTSERSLTDGLDSRTSAFIEGLQSAHARIEQTLTGSTDEI	395 606	β Υ
394 605	ALAGGYAGVSKLQKMATKNITDSATKAAVSQLSNLVGSVGVFAGWTTA	347 556	क्षे २
346 555	ALSEETDWLDAYKAIKSASYSGAALNAGKRMAGLPLDVATDGLKAVRSLVSATSLTKNGL : : :	287 503	β γ
286 502	STAGGLVANAGFGDRMLSVQSRDQLRGGAFVLGMKDKEPKA :	246 443	8 3
245 442	DKLHDAMAVSVKRHSPALGRQVVDMGIAVQTFSALNVVRTVLAPALASRPSVQGAVDFGV: : : : : : : : : : : : : :	186 399	β Χ
185 398	LATPLKPLT-PLISGALSGAMDQVGTKMMDRARGDLHYLSTSP : : : :::: :::: ::::: ::::::	144 339	요 첫
143 338	TRANKLYSEGETPATIAETFAKAEKFDRLATTASSAFENTPFAAASVLQYMQPAINKGDW : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :	84 305	8 8
83 304	GSPDERDAALAHNEQIDALVERDAALAHNEQIDALVERDAALAHNEQIDALVERDAALAHNEQIDALVERDAALAHNEQIDALVERDAALAHNEQIDALVERDAALAHNEQIDALV	63 245	용상
62 244	<pre>INQSAQQPPGVAMESFRTASDASLASSSVRSVSTTSCRDLQAITDYLKHHVFAAHRFSVI : : :</pre>	188	β γ
17;	6.1%; Score 146; DB 16; Length 2089; 1 Similarity 18.9%; Pred. No. 14; 106; Conservative 84; Mismatches 208; Indels 162; Gaps	Query Match Best Local : Matches 10	3 B C
	Proc. Natl. Acad. Sci. U.S.A. 98:9877-9882(2001). EMBL; AL591788; CAC46395.1; InterPro; IPR004089; Chmtaxis_transd. InterPro; IPR006162; Ppantne_attach. Pfam; PF00015; MCPsignal; 1. PROSITE; PS00012; PHOSPHOPANTETHEINE; 1. Hypothetical protein; Complete proteome. SEQUENCE 2089 AA; 222522 MW; 1D6334385A31ADAD CRC64;	Proc. Natl. Proc. Natl. EMBL; AL5917 InterPro; IP InterPro; IP Pfam; PF0001 PROSITE; PS0 Hypothetical SEQUENCE 2	
	MEDLINE=21396507; PubMed=11481430; Capela D., Barloy-Hubler F., Gouzy J., Bothe G., Ampe F., Batut J., Capela D., Barloy-Hubler F., Gouzy J., Bothe G., Ampe F., Batut J., Boistard P., Becker A., Boutry M., Cadieu E., Dreano S., Gloux S., Godrie T., Goffeau A., Kahn D., Kiss E., Lelaure V., Masuy D., Pohl T., Portetelle D., Puehler A., Purnelle B., Ramsperger U., Renard C., Thebault P., Vandenbol M., Weidner S., Galibert F.; "Analysis of the chromosome sequence of the legume symbiont Sinorhizobium meliloti strain 1021.";	MEDLINE= Capela D Boistard Godrie T Pohl T., Penard C "Analysi: Sinorhiz	44888888

```
ΛÖ
                                                                                                                                                                     Ųγ
Qy
                                50
                                                  망
                                                                 Λō
                                                                                  밁
                                                                                                 ΛÕ
                                                                                                                    밁
                                                                                                                                   γ
                                                                                                                                                     뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                뭐
                                                                                                                                                                                                                                                                                                                                                                  ESULT 7
85472
D 085472;
C 085472;
T 01-NOV-1998 (
T 01-NOV-1998 (
T 01-MAR-2003 (
E Extracellular
N EMB.
                                                                                                                                                                                   Query Match
Best Local s
Matches 123
                                                                                                                                                                                                                    Abiotrophia defectiva.
Bacteria; Firmicutes; Lactobacill
NCBI_TaxID=46125;
[1]
SEQUENCE FROM N.A.
STRAIN=NVS-47;
MEDLINE=99081722; PubMed=9864195;
Manganelli R., van de Rijn I.;
"Characterization of emb, a gene
Streptococcus defectivus.";
Infect. Immun. 67:50-56(1999).
EMBL; AF067776; AAD03320.1; -.
InterPro; IPR005877; Gpos_YSIRK.
Pfam; PF04650; YSIRK_signal; 1.
TIGRFAMs; TIGR01168; YSIRK_signal
NON_TER 2055 2055
SEQUENCE 2055 AA; 215642 MW;
                955
                                                  968
                                                                                  843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                \mathbf{o}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1
25
                                 \sim
                                 03
                                                                  46
                                                                                                   98
                                                                                                                                                    26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 43
                                                                                                                    Θ
                                                                                                                                   49
                                                                                                                    Φ
                                                                                                                                                                                      Nω
                                                                                                                                                    INEISORPDLTI
                                                                                           TIAETFAKAEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ISSTGASLRSTVNNLRHRSA
|: |: |: | :: |:!
TSAIAASQHRLDNTLSERTA
                                                                                                                   AKYPI
              QAIQQVDQALANAKTQVQAANDNNGVNQAKTA-GTTAINNINPQGTQKAQAIAAIEAAEQ
                                                                                No pro-
                                                                 TPLKPLTPLISGA-
                                                                                                                                    LKHHVF
                                                                                                                                                                     INQSAQQP
                                                                                                                                                                                     imilarity; Conserv
                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel.
(TrEMBLrel.
(TrEMBLrel.
                                                                                                                    EALGH
                                                                                                                                                                                                                                                                                                                                                                                                                       æ
                                                                                                                                    'AAHRE
                                                                                                                                                                                                                                                                                                                                                                                                                       LIMINARY
                                                                                                                                                                                     Ų.
                                                                                                   召
                                                                                                                                                     꼾
                                                                                                                                   SVIGSPDERDAALAHN-
                                                                                                                                                                                      (1
                                                                                                                                                                                    6.0%;
22.2%;
ive
                                                                                                                   08,
08,
23,
                                                                                                                                                                                                                                                                                                                                                    Lactobacillales;
                                                                                                                                                  -PGVAMESFRTASDASLA--SSSVRSVSTTSCRD--LQAI----TDY
|: || ||::| :|: : || || | |:: |
EKQAFMDQVRTARDAAMAKVASAANNQAVTSARDQGLNAVNNLPTPA
GFGDRMLSVQSRDQLRGGAFVLGMKDKEPKAALSEETDWL-DAYKA
                                                                LSGAMDQVGTKMMDRARGDLHYLSTSPDKLHDAMAVSVKRHSPA
                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                    Creat
Last
Last
                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                         4195
                                                                                                                                                                                     ω
                                                                                                  DRLATTAS
                                                                                                                                                                                            Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                           Jast sequence update)
Jast annotation update)
Protein (Fragment).
                                                                                                                                                                                                                                       gna
                                                                                                                                                                                                                                                                                                                                                                                                                       PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 46
                                                                                                                                                                                    ore 143.5;
ed. No. 20;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                      ted)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N
                                                                                                                                                                                                                                                                                                          5.
                                                                                                                                                                                                                                                                                           enc
                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                        50
                                                                                                                                                                                                                      699C11DDE93E2FD CRC64;
                                                                                                                                                                                                                                        فسو
                                                                                                                                                                                                                                                                                         oding
                                                                                                                                                                                                                                                                                                                                                                                                                       2055
                                                                                                 SAFENTPFAAASVLQYMQPAINKGDWL----A
                                                                                                                                                                                                                                                                                                                                                    Aerococcaceae;
                                                                                                                                   -EQIDAL----VETRANRLYSEGETPA
                                                                                                                                                                                                                                                                                         the major
                                                                                                                                                                                                      DB 2;
                                                                                                                                                                                     249;
                                                                                                                                                                                                     Length
                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                           adhesin
                                                                                                                                                                                                                                                                                                                                                   Abiotrophia.
                                                                                                                                                                                                       2055;
                                                                                                                                                                                     105;
                                                                                                                                                                                                                                                                                           o f
                                                                                                                                                                                     Gaps
                                                  954
                1014
                                                                  202
                                                                                  895
                                                                                                  145
                                                                                                                                    97
                                                                                                                    842
                                                                                                                                                    785
300
                                 253
                                                                                                                                                                     48
                                                                                                                                                                                     23;
```

₩ 9 %	100 AETFAKAEKFDRLATTASSAFENTPFAAASVLQYMQPAINKGDW 143 :: ::
, 5	TPDFMQSEKTTLISKGPKDVTWTSPPSVAETSYPSSLTPFLVTTIPPATSTLQGQH
:	
ΣY	STSPDKLH
O O	PVSATSVLTSGLVKTTDMLNTSMEPVIN
Σy	195 SVKRHSPALGRQVVDMGIAVQTFSALNVVRTVLAPALASRPSVQGAVDFGVSTAGGLVAN 254
do	4529 DIETIHPSINKAVTNMGTASSAHVLHSTLPVSSEPSTATSPMVPA 4573
Ωy	LSVQSRDQLRGGAFVLGMKDKEPKAALSEE
Οb	: : :
Σy	315 KRMAGLPLDVATDGLKAVRSLVSATSLTKNGLALAGGYAG-VSKLQKM 361
D d	4593 IEGEPTSSLTAGRKENSTLQEMNSTTESNIILSNVSVGAITEATKMEVPSFDATFIPT 4650
Σy	362ATK 386
9	: : : : : 4651 PAQSTKFPDIFSVASSRLSNSPPMTISTHMTTTQTGSSGATSKIPLALDTSTLETSAGTP 4710
λγ	387VFAGWTTAGLATDPAVKKAESFIQDKVKSTAS
g	4711 SVVTEGFAHSKITTAMNNDVKDVSQTNPPFQDEASSPSSQAPVLVTTLPSSVAFTPQWHS 4770
Σy	STGASLRSTVNNLRHRSAPEA
d	4771 TSSPVSMSSVLTSSLVKTAGKVDTSLETVTSSPQSMSNTLDDISVTSAATTDIE 4824
IT d INS	
180 081 180	Q8PLI3 PRELIMINARY; PRT; 4/53 AA.
	(TrEMBLrel. 22, Created)
	01-OCT-2002 (TrEMBLrel. 22, Last sequence update) 01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
DE Fil	Filamentous haemagglutinin. FHAB OR XAC1815
	as axonopodis (pv. citri).
OC Xar	Bacteria; Proteobacteria; Gammaproteobacteria; Xanthomonadales; Xanthomonadaceae; Xanthomonas.
	BI_TaxID=92829;
	QUENCE FROM N.A.
RC STI	STRAIN=306 / ATCC 13902 / XV 101; MFDLINE=22022145: PubMed=12024217:
	erro J.A., Reinach F.C., Farah C.S.,
RA Qua	C.B., Van Sluys M.A rtolini M.C., Camarq
	otte G., Cannavan F., Cardozo J., Chambergo F., Ciapina L.
	R.M.B., Coutinho L.L., Cursino-Santos J.R., El-Dori

밁 50 Š γo 50 50 Š 50 몽 밁 B Š 뭐 밁 SERRERERE 멍 문 Query Ma Best Loo Matches Locali E.C., Machado M.A., Martins E.C., Meidanis J., Moreira L.M., Novo M.T.M., Pereira H.A., Rossi A., Serspinola L.A.F., Takita M.A. Trindade dos Santos M., Trusetubal J.C., Kitajima J.P. "Comparison of the genomes host specificities."; Nature 417:459-463(2002). EMBL; AE011814; AAM36677.1; InterPro; IPR000688; HypA. Pfam; PF01155; HypA; 1. Complete proteome SEQUENCE Paria J.B., Pormighier: Katsuyama / Ma ŏ 417 017 35 328 299 184 077 384 303 134 252 22 173 Ø N ct 4 115 115 44 44 Ō GGVAQAG-GRDLVAGGTL-Ş QAQSLENTAAGVLAGDGDVALTAAAQLSNAGRVQAAGDLQMTAASLDQ -- O SSTGASLRSTVNNLRHRSAPEADIEEGG: | | | | : : | :: | | Q -SVGVFAGWTTAGLATDPAVKKAESF S RARGDLHY ţa. IVSNGQLGSVTGALTLTSQNDIALQGVVSAATTLQATAGGDLSQAGT AGGDLQ Ferreira E.F., Fre VANAGE DALVETRANRLYSEGETPATI Lar Machado M.A., Ma , Meidanis J., Me , Novo M.T.M., Ok , Rossi A., Sena arity Conserva -NKGDWLATPLKPL-VRSLVSAT 2 GDRMLSVQSRDQLRGGAFVLGMKDKEPKAALSEETDWLDAYKAI RDIALTATGNINNGAQVVAARDIGVQAA TSPDKLHDAMAVSVKRHSPAL-T, 5.9 22.6 ≯ RTVLAPALA 84 S., Ferreira R.C.C., Ferro M.I.T., M.C., Greggio C.C., Gruber A.,
M.C., Greggio C.C., Gruber A.,
M.C., Leite R.P., Lemos E.G.M., Lemos
, Madeira A.M.B.N., Martinez-Rossi
, Menck C.F.M., Miyaki C.Y., Moon
, Okura V.K., Oliveira M.C., Olive
ena J.A.D., Silva C., de Souza R.F
ena J.A.D., Silva C., de Souza R.F do do . _ 56.56 30 67; **-QAGSLKAQS** ₩; SAS KNGLALAGGYAGVSKLQKMATKNITDSAT Score 142; LL Pred. No. 79; 7; Mismatches two Æ . ABC4B2 Xanthomona IQDKVKSTASSTTSYVADQTVKL TFAKAEKFDR-Tsai IALQAGQDLTANG-SLQSAS 'SGAAL 2 S.M., **EB09** TPLISGALS-**QSASTLDVQAQRTLS** Teixeira E .M., White GRQVVDMGI AVQTF Ú DBF $\boldsymbol{\sigma}$ $\boldsymbol{\sigma}$ pathogens 1 0 ~ 9 LATTASSAF Length SATNASDA RPSVQGAV C Indels E.C. RC6 GAMDQVG ** •• NAGKRMAGLPLDVAT Rossi (V) **(T)** 4 Tezza veira -AST. .DGVVAAAT ALQA SGSASAGKTLRG Þ TLDLQS ntpfaaasvlqy DEGVSTAGGL ALWVV-TLGAKRDLRVDV DLTLRSAGDLT AKTVKDMSGEAI LVSGKALSITAG 166; G ቷ D.H. N.M.F œ. 주 **QLSNLVG** QTVALQA **₽** QRTLA Η Gaps NGQAQ PH) **:** eri **7**0 Ċ. 1447 1358 327 1076 4 251 416 298 243 183 136 72 22; 43 83 02 23 <u>ယ</u> ယ

> R R O O O G Q SULT)HPA2 Halobacterium sp. (Archaea; Euryarchae Halobacteriaceae; HNCBI_TaxID=64091; 01-MAR-2001 01-MAR-2001 01-MAR-2003 Htr17 tr Q9HPA2 Q9HPA2 01-MAR HTR17 مبو 0 transducer. OR VNG1733G. 유 $\omega = \overline{\omega}$ (TrEMBLrel. (TrEMBLrel. (TrEMBLrel. RELIMINAR (strain NRC-1) aeota; Halobact Halobacterium. **⊢**< 16, 16, 23, Creat Last Last PRT . . . ted) er sequence update) annotation updat ρ 536 Halobacteriales; .Α update)

망

48

AGTDAS LHGN-

RIATGRDAVLKSGG

1471

Liall J

K., Cru

K., Cru

Lianski P.E.,

Peck R.F., Po

Liang P.

Liang P.

Lowe T.M., Liang P.

Liang P.

Lowe T.M., Liang P.

Liang P RRRRRRRR Query I Best Lo Matche Ng W.V., Kennedy S.P Shukla H.D., Lasky S Swartzell S., Weir D Leithauser B., Kelle Maddocks D.G., Jablo Isenbarger T.A., Pec Alam M., Freitas T., Ebhardt H., Lowe T.M NCBI_Tax1
[1]
SEQUENCE MEDLINE= 20504483; FROM Z, \rightarrow S.P., Mahairas G.G., Berquist B., Pan M., y S.R., Baliga N.S., Thorsson V., Sbrogna J., r D., Hall J., Dahl T.A., Welti R., Goo Y.A., ller K., Cruz R., Danson M.J., Hough D.W., blonski P.E., Krebs M.P., Angevine C.M., Dale H., Peck R.F., Pohlschroder M., Spudich J.L., Jung K.-H. T., Hou S., Daniels C.J., Dennis P.P., Omer A.D., of Halobacterium species NRC-1."; Sci. U.S.A. 97:12176-12181(2000). PubMed= .P., 1 2ø 110169 Score Pred. П RANSDUC Ç ransd z o o e 141; DB . No. 3.9; ismatches D2FD8701EE04 2; • 17; CRC64;

Qγ Λõ 40 문 망 72 14 72 Ŵ 63 12 GPVMDAFS1 RRADEQRAQAQEAKAEAQDAREEAETLAAKLQERAAERDAQLSKKASEYSSVMEKAAS-QYMQPAINKGDWLATP GVAMESFRTAS LAHNEQIDALVET 8 DASLASSSVRSVSTTSCRDLQAITDYLKHHVFAAHRFSVIGSPDERDAA 71 RANRLYS LLAVLIGVVAIS EGETPAT GALS GAMDQVG-Ŋ TGT IS IVED-LKT SNARAHR-I AETFAKAEKFORLATTASSAFENTPFAAASVL -TKMMDRAR---RRKDAEQAK 214 131 113 171

Loca

9 8

~ pd-

lari:

ty er

ct P- 70

é

 α

197;

Indels

120;

Gaps

23;

Length 536;

ω

× .

Ħ.

Ü

ΣΥ	_	0
9	215 VADNSRDIHASVDEIEAASEQVAESVQEISAGTDREHTRLADA 257	7
ΣΥ	231 LASRPSVQGAVDFGVSTAGGLVANAGFGDRMLSVQSRDQLRGGAFVLGMKDKEPKAALSE 290	0
용	: : : : : : : : : : : : : : : :	N
¥	291 ETDWLDAYKAIKS-ASYSGAALNAGKRMAGLPLDVATDGLKAVRSLVSATSLTKNGLA 347	7
용	: : : : :	\vdash
ΣΥ	LQKMATKNITDSATK	7
용	362 FAVVAAEVKELAE-ETNEATDEIETLVDNLLSSTQSVVDDSEQMAATVSSGTETVENA 418	8
γ	QTVKLAKTVKDM	O.
8	419 LTALEEIGDHVTDVNEAVQQIDDATDAQAASADTTVSMIEEIEDIS-EQNSSE 470	0
24	447 GASLRSTVNNLRHRSAPEADIEEGGISAFSRSET 480	
9	471 AASVSAAAQQQTASLSDVTDGVTRLVDRADT 501	
RESULT 28XSW6	W6	
5 0	9XSW6	
5 c	(Trembtrel.	
3 3	01-MAR-2002 (TrEMBLrel. 20, Last sequence update)	
DE	gellar hook-associated protein 1	
ρΩ	FIGK OR RSP0351 OR RS00754.	
ရှိ	smid megaplasmid.	
3 6	· te	
\$?	NCBI_TaxID=305;	
3 2		
20 4	SEQUENCE FROM N.A. STRAIN=GMI1000;	
2 X	681879; PubMed=11823852;	
₹ ?	Arlat M., Billault A., Brottier P., Camus J.C., Cattolico L.,	
? ₹	, Choisne N., Claudel-Renard C., Cunnac S., Demang	
₹ ₹	ie M., Moisan A., Robert C ebault P., Whalen M., Winc	
3 ₹	J., Boucher C.A.;	
<u> </u>	Nature 415:497-502(2002).	
DR	AL646078; CAD17502.1; -	
2 2	InterPro: IPR001444; Flag_bb_rod. InterPro: IPR002371: Flag_bb_rod.	
DR S	Pfam; PF00460; flg_bb_rod; 1.	
,		

```
RESULT
Q931N9
ID Q9
AC Q9
DT 01
DT 01
DT 01
DT 01
                                                                                                                                                                                                                                                                                      80
                                                                                                                                                                                                                                                                                                                         DR
KW
SQ
                                                                      50
                                                                                                                    γQ
                                                                                                                                           50
                                                                                                                                                                   40
                                                                                                                                                                               멍
                                                                                                                                                                                          Š
                                                                                                                                                                                                       명
                                                                                                                                                                                                                 50
                                                                                                                                                                                                                             몽
                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                    뮹
                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                           В
                                                                                  밁
                                                                                                         뮹
                                                                                                                                 뮹
                                                                                                                                                        망
                                                                                                                                                                                                                                                                                                 Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                         PROSITE;
Plasmid;
SEQUENCE
Q93
Q93
01-
01-
01-
                                          31N9;
31N9;
-DEC-2001
-DEC-2001
-MAR-2003
                                                                                                                                                                                                                                                                                                             Ma
                                          N
                                                                                                                                                                                                                                                                                                              tch
                                                                                                                                                                                                                                                                                                        ρ
                                                                                                                                            298
                                                                                                                                                                   270
                                                                                                                                                                                           242
                                                                                                                                                                                                      246
                                                                                                                                                                                                                                                    151
                                                                                  54
                                                                                                                                                                               30
                                                                                                                                                                                                                             19
                                                           604
                                                                      430
                                                                                              37
                                                                                                         48
                                                                                                                     351
                                                                                                                                42
                                                                                                                                                        36
                                                                                                                                                                                                                                        28
                                                                                                                                                                                                                                                                           80
                                                                                                                                                                                                                                                                                                  ₩
₩
₩
                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                89
                                                                                                                                                                                                                                                                                      12
                                                                                  4
                                                                                                                                                                                                                              4
                                                                                                                                 O)
                                                                                                                                                        O
                                                                                                                                                                                \boldsymbol{\sigma}
                                                                                                                                                                                                                                                                                                   S Q
                                                                                                                                                                                                                                                                                                                         PS00588; FLAGELLA_Complete proteome.
                                                                                        AVSQLSNLV-
                                                                                                                                                      YSGGAY
                                                          KL-AKTVKDMSGEAISSTGASLRSTVNNL
| : | : | : | : | : |
NLDDEAMNLMKYQQAYQASAKVMQTANSL
                                                                                                                                                                                           DFGV-
                                                                                                                                                                                                     AFAQLRNATVLDNGTTSISS
                                                                                                          S
                                                                                                                                                                    LRGGAF
                                                                                                                                                                               SADVNTQNKE
                                                                                                                                                                                                                                                                                                  imilarity; Conserva
                                                                                                                                ! !: :I
                                                                                                         VTVTVNGTATTYSGTAPYTQGATY
                                                                                                                                            YKAI
                               RELIMINARY
                                                                                                                                            KSAS
                                                                                                                                                        TVSHYPDGSGAVTVSSWPT
                                                                                                                                                                   VLG-MKDKEPKAALSEETDWLDA-
                                                                                                                                                                                                                                                                                                                                     FLAGELLA
                                                                                                                                                                                                                                                                                                 5.8°
20.9°
7ative
                                                                                                                                                                              YSGAALNAGKRMAGLP
                                                                                                                     GY AGV SKLQKMA
                                                                                                                                 S —
                                                                                                                                PVVVNQGSNNT
                                                                                             GSVGVFAGWTTAGL
                                                                                                                                                                                                                                                                                                        എ എം
                                                                                                                                                                                                                                                                                                        31 34
                                                                                                                                                                                                                                                                                                                                     88
                                                                                                                                                                                                                                                                                                   67
                                                                                                                                                                                                                                                                                                 Score 14(
Pred. No.
7; Mismat
                                                                                 GWTTAGLATDPAVKKAESFIQDKVKSTASSTTSYVADQTV
||: : : |||: : |
GWSNLVTQVGIQASQASANLTSQKALLASSTSQQQSVSGV
                                                                                                                                                                                                                                                                                                                                     ROD;
                               Ř
                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                         BŞ
                                                                                                                                 S
                                                                                                                                                       :|
TVDGVTLNLTGSMASGDSFLVRPTVNAASTMQTLT
                                                                                                                                                                                                                                                                                                                         D4
                                                                                                         S
                                                                                                                                                                                                                                                                                                        14
No
                                                                                                                                                                                                                                                                                                                                     \vdash
                                                                                                          7
                                                                                                                                                                                                                                                                                                       140.5; I
                                                                                                                                VASIGVDSTYAGSPLASAVSLTYSGGSLSGFPG
                                                                                                                                                                                                                                                                                                                         CF4A6989313 CRC64;
                                                                                                                                                                                                                                                                                                  tches
                                                                                                         IGI QMSLTGT PAANDTFTVSANTANST DGHNAS
                                                                                                                                                                                                                            983
                                                                                                                                           LDVATDGLKAVRSLVSATSLTKNGLALAG---
                                                           632
                                                                                                                                                                                                                                                                                                              DB 16;
                                                                                                                                                                                                                                                                                                  216;
                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                             Length 642;
                                                                                                               -TKNITDSATKA
                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                             245
                                                                                                                                                                                                                                                                127
                                                                                   603
                                                                                             429
                                                                                                         543
                                                                                                                                                                               365
                                                                                                                                                                                                      305
                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                       67
                                                                                                                     373
                                                                                                                                            350
                                                                                                                                                       425
                                                                                                                                                                   297
                                                                                                                                                                                           269
                                                                                                                                                                                                                                         182
                                                                                                                                                                                                                                                     193
                                                                                                                                                                                                                                                                           150
                                                                                                                                483
```

5311

 \sim

(TrEMBLrel. (TrEMBLrel.

. . .

 $\mathcal{N} \mapsto \mathcal{H}$

 ω ω

. . .

Creat Last Last

sequence update) annotation update)

reated)

Š Ş 5 8 유 Ş 믕 40 밁 40 유 8 밁 Query Best I Matche Cui L., Oguchi A., Aoki K.-. Kanamori M., Matsumaru H., I Mizutani-Ui Y., Takahashi N Sekimizu K., Hirakawa H., Ki Kanehisa M., Yamashita A., (Hattori M., Ogasawara N., Ha "Whole genome sequencing of Lancet 357:1225-1240(2001).
EMBL; AP003363; BAB57920.1;
InterPro; IPR005613; AIP3.
InterPro; IPR005877; Gpos_)
Pfam; PF03915; AIP3; 1.
Pfam; PF04650; YSIRK_signal
TIGRFAMs; TIGR01168; YSIRK_ MRP OR SAV1758.
Staphylococcus aureus
Bacteria; Firmicutes;
NCBI_TaxID=158878; Complete SEQUENCE (1) che aureus. Kuroda EQUENCE FROM N.A. EDLINE=21311952; uroda M., Ohta T. Local Sines 105 Ma 250 076 276 135 -024 973 ct 319 241 196 136 930 92 5 76 20 genome proteome. 1983 AA; TASDAS imi ; KQE GLPLD PNIVKKPAALAQINQHYNAKLAE TAANTNI LNANTNADVEQVKTNA I QGI QAI TPATK VKRHSPALGRQVVDMGIAVQTFSALNVVRT QAKDQGTQNIVVIQPATQVKTDARNA שׁ INRVNTLKNRALTDIGV-TSTTAMVNSIRDDAVNQIGAVQPHVTKKQT QIDALVETRANRLYSEGETPATIAETFAKAEKFDRLATTAS AINKGDWLAT PLKPLT PLI SGALSGAMDQVGT KMMDRARGDLHYLS IDKSAETQHNTIFNNND-سز Conse I NONTNATTEEKQVALNQVDQELATA-Ġ Ч rt VLGMKDKE PKAALSEET DWLDAYKAI KSASYSGAALNAGK PubMed= VATDGLKAVRS LVSAT SLT KNGLALAGGYAGVSKLQKMA Uchiyama I. va H., Kuhara S., Goto S., Yabuzaki J., ta A., Oshima K., Furuya K., Yoshino C ra N., Hayashi H., Hiramatsu K.; ncing of meticillin-resistant Staphyloc rt. **ASSSVRSVS** signal YSIRK_ ---3 (strain Mu50 Bacillales; VΦ 9 -S ယေတ Ę ф ф • 86 ---Se . Ma signal; S φ **₹** IRK 4 aruyama A., K., Sawano hara S., Go Score Pred. TTSCRDLQAITDYLKHHVFAAHRFSVIG -at leeqqaaqq lldqavat akqnin-Nagai core 1146 VDFGVSTAGGLVANAGFGDRMLSVQSR ed. No. 28; Mismatches INATPDATNDEKNAAIN-); Baba S Ø 140.5; No. 28; A., 3C6E \vdash / ATCC 700699 taphylococcus A., Murakami H.,
no T., Inoue R.-I 69 Œ INNINQADTNAEVDQAQQLGTKAINAI শ -VNDKAREAITNINA DB 3 N 0 16 3, 11) VLAPALASRPS Ø 9 **AEVAKRIEAV** щ __ \mathbf{O} \vdash -TLNQDR ndels SAF RC Length Hos Koba Ito 0 スゥ yashi yama aito QQA RMA-VQGA KQTPNATDEEKQ TPGATREEKQEA a DQLRGGAF ATGVLNDLAT KTDAKNAcoccus **PDKLHDAMAVS** D MAASVLQYMQ 9 TKNITDSATK 4 DERDAALAHN 83 H Q AADTNQEVA Shiba ES 54 C> \vdash IKQANT Gap - 3 O 318 275 113 240 372 11 304 02 9 95 72 35 ú 21 9 4

```
SET TO THE LET TO SET TO SEE THE SET TO SET TO SEE THE SET TO SET 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             日
                                                                   멼
                                                                                                                                                                                               Query la Best La Matche
                                                                                                                                                                                                                                                                                                                                   aureus.";
Lancet 357:1225-1240(2001).
EMBL; AP003135; BAB42845.1; -.
InterPro; IPR005877; Gpos_YSIR
InterPro; IPR001899; Gram_pos_
Pfam; PF04650; YSIRK_signal; 1
TIGRFAMs; TIGR01167; LPXTG_anc
TIGRFAMs; TIGR01168; YSIRK_sig
Hypothetical protein; Complete
SEQUENCE 2186 AA; 238448 Mw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kuroda M., Ohta T., Uchiyar Cui L., Oguchi A., Aoki K.; Matsumaru H., Maruyama A., Takahashi N.K., Sawano T., Hirakawa H., Kuhara S., Got Yamashita A., Oshima K., Fu Ogasawara N., Hayashi H., I "Whole genome sequencing or aureus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q99TBO PRELIMINAR)
Q99TBO;
Q99TBO;
Q1-JUN-2001 (TrEMBLrel
Q1-JUN-2001 (TrEMBLrel
Q1-MAR-2003 (TrEMBLRel
Q1-MAR-200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. MEDLINE=21311952; P Kuroda M., Ohta T., Cui L., Oguchi A.,
                                                                                                                                                                                                                                       Loc
                                                                                                                                                                                                          (n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1305
                                                                                                                                                                                                     1tch
31 Si
105/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              373
                                                                     9
                                                                     30
                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOVVQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FQLRR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VIKP
                                                                                                                                                                                                     imi
                                                                 TAANTNILNANTNADVEQVKTNAIQGIQAITPATK-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EQIDALVETRANRLYS
                                                                                                                                         ASDAS
                                                                                                                                                                                                       llarit
Conse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel.
(TrEMBLrel.
(TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RELIMINARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADIEKAVKEKQQQIDN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Aoki K.I.,
                                                                                                                                                                                                          TT.
                                                                                                                                      SS
                                                                                                                                                                                                          هنو خيو
                                                                                                                                                                                                      5
.
.
.
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (stra.
Bacil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        \triangleright \cdot \cdot \cdot
                                                                                                                                      SVRSVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Goto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOPP
                                                                                                                                                                                                                                     ယ္
တစ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Goto S., Yabuz
Furuya K., Yo
, Hiramatsu K.
of meticillin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    •
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7 2 7 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                *
                                                                                                                                                                                                                                       24. 24
                                                                                                                                                                                                                                                                                                                                                                     anchor,
signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in
la
  ETPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Inoue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
Last sequences that annotes the contract of the contr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IRK
                                                                                                                                                                                                          \sim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               н
                                                                                                                                                                                                                                     Score
Pred.
                                                                                                                                      SLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8146;
I., Baba
Nagai Y.
Irakami H.
                                                                                                                                                                                                       34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               , Baba T., Yuzawa H., Kobayashi I., lagai Y., Lian J., Ito T., Kanamori M.kami H., Hosoyama A., Mizutani-Ui Y., le R.I., Kaito C., Sekimizu K., yabuzaki J., Kanehisa M., K., Yoshino C., Shiba T., Hattori M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                    CRDLQAITDYLKHHVFAAHRFSVIGSPDERDAALAHN
                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGASLRSTVNNLRHRSAPEADIEEGGISAFSRSETP
| | | | | :| ::| ::|
---SLDSTDNEKEVASQALAKEKEKALAAIDQAQTN
                                                                                                                                                                                                                                                                                                                                              00
                                                                                                                                                                                                                                                                                                                             teome.
CC84836F1868A4F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \sim
                                                                                                                                                                                                                                    140.5;
No. 32;
                                                                                                                                                                                                                                                                                                                                                                                                           -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     († •
FAKAEKFDRLATTASSAFENTPFAAASVLQYMQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                aphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2186 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          n-resistant
                                                                                                                                                                                                                                                                           멂
                                                                                                                                                                                                       203;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                     16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Staphylococcus
                                                                                                                                                                                                                                                                                                                                            CRC64;
                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                      Length
                                                                   -VKTDAKNA-
                                                                                                                                                                                                       143;
                                                                                                                                                                                                                                                                           2186;
                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -ADQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                427
                                                                                                                                      75
                                                                                                                                                                                                       21;
```

	DT 01-MAR-2001 (TrEM DT 01-MAR-2001 (TrEM DT 01-OCT-2002 (TrEM DE Flagellin (Fragme GN FLIC. OS Pseudomonas fragioc OC Bacteria; Proteoboc OC Pseudomonadaceae; OX NCBI_TaxID=296; RN [1]	SOT	Qy 428 TVK- : Db 1349 VIKP	Qy 373 AAVSQ : Db 1305 AAVNQ	Оу 319 GLP	Qy 276 Db 1192 PNI	Qy 241 Db 1135 KQE	Qy 196 VKR : Db 1076 INR	Qy 136 PAI рь 1024 QAK	рь 973I
Proteobacteria; Gammaproteobacteria; Pseudomonadales; daceae; Pseudomonas. =296;	1 (TrEMBLrel. 16, Created) 1 (TrEMBLrel. 16, Last sequence update) 2 (TrEMBLrel. 22, Last annotation update) (Fragment).	RR 486 : NQ 1409 PRELIMINARY; PRT; 503 AA.	TVKLAKTVKDMSGEAISSTGASLRSTVNNLRHRSAPEADIEEGGISAFSRSETP 481 ; ; ;: ;: VIKPKAIADIEKAVKEKQQQIDNSLDSTDNEKEVASQALAKEKEKALAAIDQAQTN 1404	AAVSQLSNLVGSVGVFAGWTTAGLATDPAVKKA-ESFIQDKVKSTASSTTSYVADQ 427 : :: : : : : AAVNQINQLKDQAINQINQNQTNDQVDTTTNQAVNAIDNVEAEV 1348	GLPLDVATDGLKAVRSLVSATSLTKNGLALAGGYAGVSKLQKMATKNITDSATK 372 ; ; ; ; NAEVDQAATVAENNIDAVQVDVVKKQAARDKITAEVAKRIEAVKQTPNATDEEKQ 1304	VLGMKDKEPKAALSEET DWLDAYKAIKSASYSGAALNAGKRMA 318 :: :: ::: PNIVKKPAALAQINQHYNAKLAEINATPDATNDEKNAAINTLNQDRQQAIESIKQANT 1249		VKRHSPALGRQVVDMGIAVQTFSALNVVRTVLAPALASRPSVQGA 240 : : : : : : INRVNTLKNRALTDIGV-TSTTAMVNSIRDDAVNQIGAVQPHVTKKQTATGVLNDLATAK 1134	PAINKGDWLATPLKPLTPLISGALSGAMDQVGTKMMDRARGDLHYLSTSPDKLHDAMAVS 195 :: :::: ::::: : QAKDQGTQNIVVIQPATQVKTDARNAVNDKAREAITNINATPGATREEKQEA 1075	IDKSAETQHNTIFNNNDATLEEQQAAQQLLDQAVATAKQNINAADTNQEVA 1023

```
RESULT
O64046
ID OC
AC OC
DT OI
DT OI
OX
CON YC
CON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DR DR DR DR DR PTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ΛÖ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ΛÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      뭉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ΛÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Ma
Best Loo
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  064046 PRELIMIN 064046; 01-AUG-1998 (TrEMBL 01-AUG-1998 (TrEMBL 01-AUG-1998 (TrEMBL 01-JUN-2002 (TrEMBL Putative transglycomyoMI.

Bacteriophage SPBc2 Viruses; dsDNA viruses Viruses PBc2 Viruses; dsDNA viruses PBc2 Viruses Viruses PBc2 Viruses PBc2 Viruses Viruses Viruses Virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match
Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                  G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           \boldsymbol{\omega}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      യ ശ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |:| : |
PVKGMAVT]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QDKVKS'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATPA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RHSPALG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PLKPLTPLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ALNAGKRMAGLPLDVATDGLK-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VLGMKDKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EASAAGGVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -- h-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ΑI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FTAKVGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SALNVVRTVLAPALASRPSVQGAVDF
                                                                                                                                                                                                                 (TrEMBLrel.
(TrEMBLrel.
(TrEMBLrel.
ansglycosyle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  larit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \triangleright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KDS
                                                                                                                                                                                                                                                                                                                                                                                RELIMINARY
        N.A.
Duesterhoe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NLLGRPVEIQVNGVKVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              文 …
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 y
rva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LTRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IADAVAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IANANNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    I: |
TLSANV-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ïGA−
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5.0
24.1
tive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                          O • • •
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (V)
                                                                                                                                                                                                                        07,
07,
21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
. . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ::|
TTTFGSRNLLDGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INKQT
                                                                                                                                00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                op op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₩W;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ---LSGAMDQVGTKMMDRARGDLHYLSTSPDKLHDAMAVSVK
||| | :: | | :| | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | | : | : | | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | : | :
                                                                                                                                RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YVADQTVKLAKTVKDMSGEAISSTGASLR 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KNADNTLKLFST-KD---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4
                                                                                                                                                                                                                                                   Created)
Last sequ
Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>`</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               y
Pr
Sc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RQVVDMGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              core
                                                                                                                                                                                                                                                                                                                                                                                   PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AE42EI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ore 140; DB
ed. No. 4.1;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -AVRSLV-SATSLTK-NGLALAGGYAGVSKLQKMATK
| || :| ::|| | : | | | : : |
| AAGSLENAAAAITKANTDSKTGVNASVKDGRLVLTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | || :|: | | : |
GVTASADAATGTKLTLSSASDFTAVGSAASDAGFVAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ••
                                                                                                                                                                                                                                                    sequence update)
                                                                                                                                                                                                                                                                                                                                                                                5.
                                                                                                                                \mathbf{O}
                                                                                                                                                                                                                                                                                                                                                                              2285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GLTAGSTQAKLTNDTSVSFNGVGVKFKKGDS--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EFB521BF7C1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FQNQSFQVGADANQTISFGMSDISATGLKGSYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         [AVQTF-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GVSTAGGLVANAGFGDRMLSVQSRDQLRGGAF
                                                                                                                              Caudovirales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -PKAALSEETDWLDAYKAIKSASYSGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  135;
                                                                                                                                                                                                                                                  update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2; Length 503;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -ITIAGGSCR 388
  H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                              Siphoviridae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     --KKAESFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19;
```

Ō

1

ct

 \rightarrow

Soldo

Hilbert

Mauel

QSQQTNVEAITTNKDSTDKLIQQYKELQKVKESRSLTSDEEQEYLQVTQQLAQTFPALVK 838	779 QSQQTN	당
ESFIQDKVKSTASSTTSYVADQTVKLAKTVK 436	406	γQ
TAGLEAGMTRAAVASRVLKTALRGLLVSTLVGGAFAALGWALESLISSFAEAKKAKDDFE 778	719 TAGLEA	Дb
TKNITDSATKAAVSQLSNLVGSVGVFAGWTTAGLATDPA-VKKA 405	363 TKNITD	9
FTQAAGSLLNASTGVIKSVGFLPPLLAAVSTATLLLSKNTRTLASSLILGTRAMGQETLA 718	659 FTQAAG	<u>д</u>
-RMAGLPLDVATDGLKAVRSLVSATSLTKNGLALAGG-YAGVSKLQKMA 362	316RMAG	Qy
I II I NNFSIAQNAAKTAANSTGSAWSEQQKYADSLQARVNKLQNNFTEFAIAASDAFISDGLIE 658	599 NNFSIA	日
AALNAGK 315	309AA	ОУ
::: : : : : : :! : :	539 IKALEQ	рb
VQSRDQLRGGAFVLGMKDKEPKAALSEETDWL-DAYKAIKSASYSG 308	264 VQSRDQ	γQ
DLANSIRKAGSTASTFGVELNDLIGYTTAIASTTRESGNIVGNSLKTIFARIGNNQSS 538	481 DLANSI	망
SALNVVRTVLAPALASRPSVQGAVDFGVSTAGGLVANAGFGDRMLS 263	218 SALNVV	Qy
ELSTLTKTAQVLQNVSDLTPDDTVNTLTAAMLNFNIAANDSISIADKLNEVDNNYAVTTL 480	421 ELSTLT	D D
GTKMMDRARGDLHYLS-TSPDKLHDAMAVSVKRHSPALGRQVVDMGIAVQTF 217	167 GTKMMD	94
: : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :	364 IEIDTL	D D
EKFDRLATTASSAFENTPFAAASVLQYMQPAINKGDWLATPLKPLTPLISGALSGAMDQV 166	107 EKFDRL	γ2
	307 LNMQFR	B
HNEQIDALVETRANRLYSEGETPATIAETFAKA 106	74 HNEQID	Qγ
IELYQRQAQVNVQNLNTRYGSSMGSSNRQAVQDYLNAVNSLNVSTGSNNIRSQIQS 306	251 IELYQR	Db
MESFRTASDASLASSSVRSVSTTSCRDLQAITDYLKHHVFAAHRFSV-IGSPDERDAALA 73	15 MESFRT.	γo
5.8%; Score 140; DB 9; Length 2285; ilarity 20.5%; Pred. No. 36; Conservative 80; Mismatches 224; Indels 192; Gaps 26;	Query Match Best Local Similarity Matches 128; Conser	Z m O
2; TRANSGLYCOSYLASE; 1. AA; 252310 MW; FF602C227754B357 CRC64;	SEQUENCE 2285	SQ
Peptidase_M37; 1. SLT; 1.	01551;	קט קט קט
SLT_domai	Pro; IPROO	DR DR
<u></u>	- 1 A	אַ אָ
1997) to the EMBL/GenBank/DDBJ databases.	- e+ (RE
nucleotide sequence of the Bacillus subtilis SPbetac2	D.; lete	RA

Qy 437 --DMSGEAISSTGASLRSTVNNLR 458 | | | | | : | : Db 839 GYDSQGNAILKTNKELEKAIENTK 862

Search completed: January 6, 2004, 09:45:15 Job time : 43 secs